INVENTORY OF PHYSICAL FACILITIES OF ONTARIO UNIVERSITIES

1998-99

COUNCIL OF
ONTARIO UNIVERSITIES

CONSEIL DES
UNIVERSITÉS DE L'ONTARIO

COU No.670

100-04416/

INVENTORY OF PHYSICAL FACILITIES OF ONTARIO UNIVERSITIES

1998-99

For more information, contact:
Arlene Levine, alevine@cou.on.ca

Council of Ontario Universities
Conseil des universités de l'Ontario
180 Dundas Street West, Suite 1100,Toronto, Ontario M5G 1Z8
Phone: (416) 979-2165 Fax: (416) 979-8635

April, 2000

ISBN #0-88799-344-3

COU No.670

This report presents summary statistics on application and registration patterns of applicants (who were processed by the Application Centre), applying for fall entry into full-time study in their first year of post-OAC programs in Ontario Universities.

This series of annual reports commenced with admissions in Fall, 1973.

****

This report was prepared by the Research, Analysis and Policy Division of the Council of Ontario Universities and by the Ontario Universities' Application Centre. Requests for further information should be directed to A. Levine, Council of Ontario Universities.

TABLE OF CONTENTS

Committee on Space Standards and Reporting – Membership 1
Physical Inventory Contact Persons 3

SECTION 1: INTRODUCTION

The Development and Use of Building Blocks 7
The COU Committee on Space Standards and Reporting 8
Accountability and Utilization Issues 8
Changes and Improvements in Reporting 9
Some Committee Activities Since 1987 10

SECTION 2: AN OVERVIEW, 1977-78 to 1998-99

Notes 13

Highlights (Tables) 15

Table A Total ACTUAL Space Inventory by COU Space Categories, 1977-78 to 1998-99 17

Table B Percentage Change in Distribution of ACTUAL Space Inventory by COU Space Categories, 1977-78 to 1998-99 19

Table C Percentage Change in Distribution of ACTUAL Space Inventory by COU Formula Space Categories, 1977-78 to 1998-99 21

Table D Total ACTUAL Space Inventory (NASM) by Space Classification, 1977-78 to 1998-99 23

Table E Total GENERATED Space (NASM) by Space Classification, 1977-78 to 1998-99 25

Table F Percentage Change in Distribution of GENERATED Space (NASM) by Space Classification, 1977-78 to 1998-99 27

Table G ACTUAL Inventory / GENERATED Space (NASM) by Space Classification, 1977-78 to 1998-99 29

Table H Ratio of ACTUAL Inventory to GENERATED Space (NASM) by Formula Space Classification, 1977-78 to 1998-99 31

Highlights (Figures) 33

Figure 1: Actual Inventory (NASM) / Generated Space by Functional Areas (with NASM for each functional area), 1998-99 35

Figure 2 Functional Breakdown of Formula Space Usage, 1998-99 37

Figure 3 Percentage Distribution of ACTUAL Space Inventory (NASM) Usage for Formula Areas, 1977-78 to 1998-99 39

Figure 4 % Actual Inventory / Generated Inventory by Selected Functional Area 1977-78 to 1998-99 41

Figure 5 Total Actual Inventory / Generated Inventory and Average Age of Buildings 45

SECTION 3: INSTITUTIONAL TABLES (1998-99 survey)

Table 1	Inventory of University Space, November 1, 1998	51
Table 2	Distribution of Actual Inventory by Major Space Category and Institution	52
Table 2A	Percent Distribution of Actual Inventory by Major Formula Space Category and Institution	54
Table 2B	Percent Distribution of Actual Inventory by Major Space Category and Institution	55
Table 3	Age Profile of Ontario University Space (as of November 1, 1998)	57

Institutional Space Requirements as Measured by COU Space Standards

Table 4	System Summary	59
Table 5	Brock University	61
Table 6	Carleton University	62
Table 7	University of Guelph	63
Table 8	Lakehead University	64
Table 9	Laurentian University	65
Table 10	Algoma University College	66
Table 11	Universitaire de Hearst	67
Table 12	McMaster University	68
Table 13	Nipissing University	69
Table 14	Ontario College of Art & Design	70
Table 15	University of Ottawa	71
Table 16	Queen's University	72
Table 17	Ryerson Polytechnic University	73
Table 18	University of Toronto (St. George campus)	74
Table 19	University of Toronto (Mississauga campus)	75
Table 20	University of Toronto (Scarborough campus)	76
Table 21	Trent University	77
Table 22	University of Waterloo	78
Table 23	University of Western Ontario	79
Table 24	Wilfrid Laurier University	80
Table 25	University of Windsor	81
Table 26	York University (Main campus)	82
Table 27	York University (Glendon campus)	83

SECTION 4: SUMMARY TABLES

Table 28 Classroom Facilities (1): Generated Space and Inventory 87

Table 29 Class Lab Space (2): Generated Space and Inventory 88

Table 30 Lab - Research Facilities (3): Generated Space and Inventory 89

Table 31 Academic Departmental Office Space and Related Space (4): Generated Space and Inventory 90

Table 31A Graduate Student Office Space (4.3): Generated Space and Inventory 91

Table 32 Administrative Office Space (10): Generated Space and Inventory 92

Table 33 Library Space (5): Generated Space and Inventory 93

Table 34 Physical Education/Athletics Space (6): Generated Space and Inventory 94

Table 35 Maintenance Space (9): Generated Space and Inventory 95

Table 36 Student and Central Services Space (7-8, 11-15): Generated Space and Inventory 96

Table 37 Total Space (1-15): Generated Space and Inventory 97

SECTION 5: APPENDICES

Appendix A Space Classification Scheme, Formula and Measures 101

Appendix B COU Space Standards 147

Appendix C List of Input Measures 149

Appendix D Definitions 151

Appendix E Program Classification Scheme 155

Appendix F Calendar of Pertinent Information / Publications 159

Committee on Space Standards and Reporting - Membership

Wilf Ward, Chair
McMaster University

Kieron Brunelle (to 1998)
York University

Murray Green
Nipissing University

Larry Hoy
University of Guelph

Mark Hurley (from 1999)
University of Western Ontario

Gail Milgrom
University of Toronto

Prof. Michael Miller (from 1999)
Ryerson Polytechnic University

Mary Lynn Reimer (from 1999)
York University

Ken Roth
Queen's University

Rob Vanderspek
Wilfrid Laurier University

S. Marita Williams
University of Waterloo

COU Secretariat
Arlene Levine

The COU Secretariat would like to thank the committee members for their invaluable help in producing this report.

PHYSICAL INVENTORY CONTACT PERSONS

Persons to contact for assistance in interpreting individual institutional information:

Brock University
Mr. Scott Walker
Physical Plant
Manager, Projects
St. Catharines, ON. L2S 3A1
Tel: (905) 688-5550 x 3105
Fax: (905) 688-6894
EM: swalker@spartan.ac.brocku.ca

Carleton University
Mr. William Pickett, Senior Analyst
Office of Institutional Planning
604 Robertson Hall
1125 Colonel By Drive
Ottawa, ON. K1S 5B6
Tel: (613) 520-2600 x 4473
Fax: (613) 520-4474
EM: bill.picket@carleton.ca

University of Guelph
Ms. Helen Murphy,
Manager, Space Planning & Design
Physical Resources, Hersey Bldg.
Guelph, ON. N1G 2W1
Tel: (519) 824-4120 x 2145
Fax: (519) 837-0581
EM: helen@pr.uoguelph.ca

Lakehead University
Diane Michieli-Pedwysocki
Project Manager
Physical Plant
Thunder Bay, ON. P7B 5E1
Tel: (807) 343-8962
Fax: (807) 343-8938
EM: diane.michieli@lakeheadu.ca

Laurentian University
Mr. Roy Kari
Director of Institutional Research
Ramsey Lake Road
Sudbury, ON. P3E 2C6
Tel: (705) 675-1151 x 4282
Fax: (705) 673-6519
EM: roy@nickel.laurentian.ca

Algoma University College
Mr. Bruno Barban, Director
University Services
1520 Queen Street East
Sault Ste. Marie, ON. P6A 2G4
Tel: (705) 949-2301 ext 266
Fax: (705) 949-8289
EM: barban@tbird.auc.on.ca

College Universitaire de Hearst
Ms. Gisèle Blanchette
CP 580 60-9e rue
Hearst, ON. P0L 1N0
Tel: (705) 372-1781
Fax: (705) 362-7518
EM: n/a

McMaster University
Mr. Wilf Ward, Director
Office of Analysis & Budgeting
1280 Main Street West
Gilmour Hall, Room 306J
Hamilton, ON. L8S 4L8
Tel: (905) 525-9140 x 23295
Fax: (905) 528-6132
EM: wardw@mcmaster.ca

Nipissing University
Mr. Murray Green
Vice-President,
Administration and Finance
P.O. Box 5002
100 College Drive
North Bay, ON. P1B 8L7
Tel: (705) 474-3450
Fax: (705) 495-2601
EM: murrayg@admin.unipissing.ca

Ontario College of Art & Design
Mr. Peter Lashko
Director of Plant Services
100 McCaul Street
Toronto, ON. M5T 1W1
Tel: (416) 977-6000 ext 619
Fax: (416) 977-6576
EM: plashko@ocad.on.ca

University of Ottawa
Dr. Joseph Lloyd-Jones
Assistant Vice-Rector, Institutional
Research & Planning
550 Cumberland Street
Ottawa, ON. K1N 6N5
Tel: (613) 562-5954
Fax: (613) 562-5226
EM: josephlj@uottoawa.ca

Queen's University
Mr. Ken Roth
Space Planner
Campus Planning & Development
Kingston, ON. K7L 3N6
Tel: (613) 533-2026
Fax: (613) 533-2724
EM: rothk@post.queensu.ca

Ryerson Polytechnic University
Mr. Ian Hamilton
Director, Campus Planning and
Facilities
111 Bond Street
Toronto, ON. M5B 2K3
Tel: (416) 979-5091
Fax: (416) 979-5248
EM: ihamilto@acs.ryerson.ca

University of Toronto
Mrs. Gail Milgrom
Senior Planning & Budget Officer
Office of the Vice Provost, Planning &
Budget)
27 King's College Circle
Toronto, ON. M5S 1A1
Tel: (416) 978-6844
Fax: (416) 971-2809
EM: gail.milgrom@utoronto.ca

Trent University
Mr. Christopher Michael
Co-ordinator of Institutional Research &
Planning
Peterborough, ON. K9J 7B8
Tel: (705) 748-1028
Fax: (705) 748-1105
EM: cmichael@trentu.ca

University of Waterloo
Ms. S. Marita Williams
Manager, Space Info & Resource
Planning
Associate Provost, Academic Affairs
200 University Avenue West
Waterloo, ON. N2L 3G1
Tel: (519) 888-4567 ext 6526
Fax: (519) 888-6337
EM: mwilliam@nh4.adm.uwaterloo.ca

University of Western Ontario
Mr. Mark Hurley
Planning Analyst
Dept of Institutional Planning &
Budgeting
Stevenson-Lawson Building,
London, ON. N6A 5B8
Tel: (519) 661-3536 ext 85656
Fax: (519) 661 3139
EM: mhurley@julian.uwo.ca

Wilfrid Laurier University
Robert Vanderspek
Manager: Facilities Planning, Design &
Construction
Physical Plant and Planning
Waterloo, ON N2L 3C5
Tel: (519) 884-1970 ext 6310
Fax: (519) 886-9351
EM: rvanders@mach2.wlu.ca

University of Windsor
Mr. Gary McMann
Sr. Manager: Engineering & Construction
Physical Plant Department
401 Sunset
Windsor, ON. N9B 3P4
Tel: (519) 253-3000 ext 2158
Fax: (519) 561-1404
EM: garym@uwindsor.ca

York University
Mr. David M. Smith
Assistant Vice-President (M.I.),
4700 Keele Street
North York, ON. M3J 1P3
Tel: (416) 736-5161
Fax: (416) 736-5957
EM: smith@yorku.ca

Section 1

INTRODUCTION

INTRODUCTION

This report presents results of the latest in a series of triennial surveys conducted by the Council of Ontario Universities in order to monitor existing university space inventory and changes in space requirements, as determined by the *COU Building Blocks* space formula.

For those unfamiliar with the terminology used in the report, please see Appendix D: Definitions.

The Development and Use of Building Blocks

The COU space formula and inventory classification system were developed in the 1970s, and have been revised over the years, most recently prior to publication of the 1986-87 survey data in Volume VII of the *Building Blocks* series.

The COU Survey of Physical Facilities takes place during the winter of each third academic year. Data as of November 1 are requested, to coincide with the date for reporting of student enrolment to the Ontario government for operating grants purposes.

In the survey, each institution is asked to report current inventory in 20 space categories, and related input measures, such as student enrolment, faculty and staff full-time equivalent positions, laboratory contact hours, and equivalent volumes in the library collection. These input measures are used in the calculation of space requirements for the first 15 of the categories, for which quantitative space factors have been determined. The resulting calculations of space entitlement are used, with the data on existing inventory, in various ways. For example, COU uses the survey data to monitor changing space needs and as part of the case made to government about capital funding requirements for the university system as a whole. Individual institutions may compare their existing inventory with space entitlement under the COU formula in proposals for capital funding for new buildings, and the COU formula (sometimes with modifications) is used in institutional planning, such as estimating the needs of a division for different types of space.

Outside agencies and institutions, including universities and government ministries in British Columbia and Saskatchewan, are also users of *Building Blocks*. Consultants planning university facilities in Canada and in other countries frequently request COU space publications. The Canadian University Reciprocal Insurance Exchange (CURIE) uses the COU space categories as a basis for determining the value of university facilities for insurance purposes. And, since 1986-87, the "Ontario Ministry" has allocated funds for repair and renovation according to each institution's entitlement for space in the 15 formula categories.

"Ontario Ministry" refers to the Ontario Ministry responsible for post-secondary education. Until February 1993, it was called Ministry of Colleges and Universities; from February 1993 until July 1999 it was called Ministry of Education and Training, and from July 1999 to the present it is called Ministry of Training, Colleges and Universities.

The COU Committee on Space Standards and Reporting

Coordination of the triennial survey, periodic reviews of the space standards, and special studies on the availability and utilization of university space are the responsibility of the Committee (established in 1988). The Committee has undertaken a number of projects, including a study of classroom utilization in Ontario universities (a joint project with the "Ontario Ministry") and an examination of the Building Blocks formula in relation to university space standards in other North American jurisdictions. In addition to special studies, the Committee uses the detailed data collected in the survey to monitor changes in space needs, such as the impact of computing on the laboratory, library and office categories. A list of publications from the Committee and its predecessors is included in Appendix F of this report.

In 1992, the Committee prepared the *COU Building Blocks Users' Guide*, in response to requests for a document which would be more concise, up-to-date and "user friendly" than the volumes in the *Building Blocks* series which describe in detail the space classification scheme, the assumptions in the space factors and the analysis used in developing, testing and revising the complete COU space formula.[1] The *Users' Guide* contains instructions for the preparation of institutional responses to the triennial survey, and also explains how the COU space formula can be used to analyze space requirements for purposes other than the survey. The *Users' Guide* is revised every survey cycle.

Accountability and Utilization Issues

Explaining how university space is being used is an on-going responsibility of the Committee. With increasing emphasis on accountability, universities are expected to ensure that their use of resources, including physical facilities, is efficient and that appropriate information on utilization is made available to Government and the wider public. The space factors used in Building Blocks contain implicit utilization measures for classrooms and laboratories.

For example, in the late 1980's, COU and the "Ontario Ministry" conducted a joint study of classroom utilization, to determine whether the utilization assumptions were still appropriate.[2] Data from a sample of Ontario universities showed that the universities were meeting or exceeding the hours of use per week and percentage of seats occupied in the classroom space factor, and that average area for the different furniture types currently in use was also consistent with the assumption in the formula. The survey also showed that extended use during the evening is occurring at many institutions.

---

[1] *Building Blocks: Background Studies on the Development of a Capital Formula for Ontario. Volume I: Report of the Task Force - Space and Utilization* (Council of Ontario Universities, 1972), COU publication # 72-9; *Building Blocks: Volume VI: Report of the Subcommittee-Revisions to Building Blocks* (Council of Ontario Universities, 1978), COU publication # 78-12; and *Building Blocks: Volume VII: The Final Report of the Task Force to Review COU Space Standards* (Council of Ontario Universities, 1988), COU publication #88-1.

[2] *Classroom Space Utilization in Ontario Universities, 1988-89* (Council of Ontario Universities, 1990).

The publication of a major California study on university space standards also provided an opportunity to examine the COU standards in relation to systems in use in other North American jurisdictions. A short summary of the California study was prepared[3], which demonstrates that the COU standards are consistent with standards used elsewhere in Canada and the U.S., and that in most space categories, the COU standards are more rigorous.

More than twenty-five years after they first appeared, the original *Building Blocks* publications are still requested by universities, government departments and planners in North America and abroad. The COU space formula retains its usefulness and credibility, in large part because it undergoes regular review and updating, a process that does not always occur in other jurisdictions.

Changes and Improvements in Reporting

Commencing with the 1998 report, the FTE enrolment figures include ineligible students (for the purpose of provincial funding) for both graduate and undergraduate students.

In 1996, the Ontario Institute for Studies in Education (OISE) merged with the University of Toronto. Commencing with the 1998 report, OISE is included with the University of Toronto.

Algoma University College and Collège Universitaire de Hearst submitted incomplete data, therefore, the 1995 data for contact hours and inventory for Class Labs and Lab-Research were used. Also, 1995 data was used for Non-Academic staff at Algoma University College.

---

[3]MGT Consultants, *Survey of Space and Utilization Guidelines and Standards in the Fifty States*, Report submitted to Mr. William L. Storey, Project Director, California Postsecondary Education Commission (Sacramento, March 31, 1989). Its findings are summarized in *University Space Standards in North America* (Council of Ontario Universities, 1990).

Some Committee Activities since 1987

- Review and publication to the institutional responses to triennial surveys of physical resources.

- Conducted a study of classroom utilization in Ontario universities (joint project with the "Ontario Ministry"). Data from a sample of Ontario Universities showed that the universities were meeting or exceeding the hours of use per week and percentage of seats occupied in the classroom space factor, and the average area for the different furniture types currently in use was also consistent with the assumption in the formula. The survey also showed that extensive use during the evening was occurring in many institutions.

- Examined Building Blocks formula in relation to university space standards in other North American jurisdictions.

- Reviewed space guidelines for performance oriented disciplines (e.g., Music, Film, Dance) in 1991.

- Investigated the impact of computing on several space categories.

- Produced a Users' Guide for completing space surveys.

- The Committee reviewed the library volume equivalencies used in the generation of stack space entitlement. With the assistance of OCUL, the committee adopted the methodology used by Canadian Association of Research Libraries (CARL).

- Provided background information and scenarios for PriceWaterhouseCoopers to examine the impact of the anticipated increase of students on the existing physical facilities of Ontario universities.

- Involved in discussions concerning facilities condition index issues.

- Currently reviewing standards, particularly with respect to classrooms, class laboratories and computing space. The space factors contain implicit utilization rates.

Section 2

AN OVERVIEW

1977-78 to 1998-99

AN OVERVIEW, 1977-78 to 1998-99

NOTES

Tables A through H show actual and generated space inventory figures by COU space categories from 1977-78 to 1998-99. The reader should be aware that this data is not directly comparable during this time period, for a number of reasons:

- In the 1977-78 and 1980-81 reports, data was reported in NASF (net assignable square feet). For comparability purposes, the data was converted to NASM (net assignable square metres) using a factor of 10.764.

- A consistent set of institutions is not included for all survey years.
  1977-78: Algoma, Hearst, Nipissing, OISE and OCAD were not included.
  1980-81: Algoma, Hearst, Nipissing, and OISE were not included.
  1983-84: Hearst and partial data for OISE were not included.
  1986-87: Algoma, Hearst, Nipissing, OISE, and OCAD reported data, but were not included in the summary data because "COU standards can't be applied to small or special purpose institutions".
  1989-90: Algoma, OISE, and OCAD were not included; Hearst and Nipissing reported data but were not included in the summary data. See 1986-87 note.
  1998-99: OISE is included with Toronto (St. George) data.

- The COU Task Force to Review COU Space Standards revised some space factors and input measures for the 1986-87 report. A number of minor changes were made to most categories, but the space factors for Academic and Administrative Office changed most dramatically as seen in the following table:

Category	COU Space Factor: 1977-78 to 1983-84	COU Space Factor: 1986-87 to 1998-99
Academic Office (4)	19.516 NASM per FTE Faculty 3.717 NASM per FTE Graduate Student Factors for faculty include a provision for academic support staff and service.	13.0 NASM per FTE Faculty x 1.15 4.0 NASM per FTE Graduate Student 30% of total generated for faculty and graduate students.
Administrative Office (10)	9.0 NASM Factor per student includes a provision for service space.	13.0 NASM 30% of total generated for non-academic staff.

Please see Building Blocks Volume 7. Final Report of the Task Force to Review COU Space Standards for revisions made to all categories.

The reader should be aware that comparisons should not be made in generated space figures.

- Commencing with the 1992-93 report, COU has included federated and affiliated colleges in the triennial survey, in response to the "Ontario Ministry's" funding requirements. Data on space and activities at all of these institutions are now fully integrated into the reports of their constituent universities.

- Commencing with the 1992-93 report, Nipissing University appears as a separate institution – in previous years Nipissing was reported as an affiliated college of Laurentian University.

- In conducting the 1995-96 survey, special efforts were made to ensure that the data were consistent with other sources of information, such as student enrolment data reported to the "Ontario Ministry", and that significant variances from the previous report were justified. Work will continue to improve the completeness and consistency of reporting for the triennial surveys. The Committee will continue to review the formula as changes in university program delivery and administrative requirements indicate.

- Commencing with the 1995-96 report, the library equivalency figure calculation was changed.

- Caution should be exercised when analysing Class Lab and Lab-Research data. The figures may not necessarily agree between Table 2 and the institutional/summary tables. Table 2 includes all space, but the institutional/summary tables only include the space in those disciplines which can be categorised in Groups A to E (for Lab-Research) and Groups W to Z (Class Lab).

HIGHLIGHTS (Tables)

Table A: Total ACTUAL Space Inventory by COU Space Categories, 1977-78 to 1998-99
This table shows the change in actual inventory by the 20 COU space categories in the past 20 years.

Table B: Percentage Change in Distribution of ACTUAL Space Inventory by COU Space Categories, 1977-78 to 1998-99
This table compares the percentage distribution of space among the 20 COU space categories between 1977-78 and 1983-84, and, 1986-87 and 1998-99. The percentage change in distribution from 1977-78 and 1998-99 is also shown.

The table shows that the total space devoted to *formula areas* has decreased by 3.5% in the past 20 years, compared to a 3.5% increase in *non-formula areas* (mainly due to the increase in residence space).

The figures show that the distribution of space among the 20 COU space categories is relatively consistent over time: in fact, only C*lassrooms, Lab Undergraduate* and A*cademic Office & Related* space only showed any "significant" change.

- *Classroom* space occupied 5.6% of the total space in 1977-78, but only 4.9% in 1998-99 – a decrease of 0.7%.
- In 1977-78 *Lab Undergraduate* space occupied 8.7% of the total space; by 1998-99 that figure declined to 6.1% - a decrease of 2.5%.
- *Academic Office & Related* space increased by 1.1% during this period; from 8.2% of the total space in 1977-78 to 9.3% in 1998-99.

Table C: Percentage Change in Distribution of ACTUAL Space Inventory by COU Formula Space Categories, 1977-78 to 1998-99
This table shows the same data as in Table B, but includes only formula space.

The data show that:

- Although the amount of space devoted to *Classroom facilities* increased by 50,000 NASM from 1977-78 and 1998-99, the percentage of *Classroom space* actually declined from 10.9% to 10.2% of the total formula space.
- The amount of space devoted to *Lab Undergraduate* has remained virtually unchanged since 1977-78 (320,000 NASM), but its share of the total formula space declined by 4%.

Table D: Total ACTUAL Space Inventory (NASM) by Space Classification, 1977-78 to 1998-99
This table shows actual space inventory by formula space classifications for the past 20 years.

The table also shows the ratio between the T*otal Formula area (NASM)* and *FTE Students*. This ratio has hovered between 9.8 and 11.6 in the past 20 years; in 1998-99 there were 10.6 NASM / FTE Student, compared to 1980-81 where the ratio was 11.6 NASM / FTE Student.

Table E: Total GENERATED Space (NASM) by Space Classification, 1977-78 to 1998-99
This table shows the *Generated* space by formula space classification. This table is comparable to Table C which shows actual space by formula space classification.

As expected, the ratio between *Total Formula areas (NASM)* and *FTE Students* has remained relatively constant over time at approximately 12 NASM / FTE Student.

Table F: Percentage Change in Distribution of GENERATED Space (NASM) by Space Classification, 1977-78 and 1998-99
This table compares the percentage distribution of generated space among the COU formula categories between 1977-78 and 1983-84, and, 1986-87 and 1998-99. The percentage change in distribution from 1977-78 and 1998-99 is also shown.

The table shows that between 1977-78 and 1998-99, Ontario universities generate the most space in the following space categories: *Lab-Research, Academic Office & Related* and *Library* space.

Table G: ACTUAL Inventory / GENERATED Space (NASM) by Space Classification, 1977-78 and 1998-99
This table compares *Actual* and *Generated* space by COU formula space classification in 1977-78 and 1998-99.

The table shows that although the actual space has increased (1.9 million NASM in 1977-78, 2.5 million NASM in 1998-99), the difference between actual space and generated space has been increasing from 1977-78 and 1998-99. In 1977-78, the difference between total actual and generated space was 86,000 NASM, by 1998-99 the figure increased to 414,000.

In particular, the difference between actual and generated *Classroom* space increased from 4,000 in 1977-78 to 29,000 in 1998-99. Also, the difference between actual and generated *Class Labs* space increased from 12,500 in 1977-78 to 47,000 in 1998-99.

Table H: ACTUAL Inventory / GENERATED Space (NASM) Ratios by Formula Space Classification, 1977-78 to 1998-99
This table shows the actual inventory / generated space for each major COU space classification.

Table A

Total ACTUAL Space Inventory by COU Space Categories, 1977-78 to 1998-99

Cat. #	Space Category	1977-78	1980-81	1983-84	1986-87	1989-90	1992-93	1995-96	1998-99
Formula Areas (NASM)									
1.	Classroom Facilities	209,776	210,269	215,897	206,972	218,568	247,913	256,078	260,194
2.	Lab Undergrad	323,156	331,267	332,034	311,046	310,303	326,451	333,493	325,353
3.	Lab Grad & Faculty	230,534	232,485	250,410	300,052	318,474	339,867	345,662	349,394
4.	Acad. Office & Related	304,711	311,910	335,637	355,143	382,202	457,342	463,055	490,985
5.	Library & Study Facilities	243,173	256,235	264,178	264,431	280,579	318,214	326,963	325,471
6.	Recreation/Athletic Space	127,976	142,962	155,306	153,520	158,880	168,970	180,809	177,215
7.	Food Service	92,991	92,307	90,557	92,746	90,372	106,188	106,024	105,743
8.	Bookstore & Merch. Facilities	26,572	28,214	29,104	28,694	29,254	30,031	34,350	38,037
9.	Plant Maintenance	37,421	40,136	37,064	43,122	44,833	50,562	50,893	52,434
10.	Admin. Office & Related	135,173	138,895	149,336	164,200	180,054	192,525	211,166	200,089
11.	AV / TV Facilities	13,399	13,817	14,182	13,609	13,363	14,264	12,722	12,983
12.	Central Services	41,246	38,217	43,435	47,110	48,276	50,849	50,917	53,180
13.	Health Service Facilities	5,380	5,775	5,231	6,206	5,980	5,617	6,723	7,286
14.	Student Activity Space	93,721	88,887	89,472	80,647	80,633	92,344	102,238	101,491
15.	Assembly, Exhibition Facilities	45,462	46,079	47,298	44,185	47,349	56,281	56,043	54,812
Subtotal - Formula Areas		1,930,691	1,977,456	2,059,141	2,111,683	2,209,120	2,457,418	2,537,136	2,554,667
16.	**Non-Assignable (SM)**	1,200,599	1,233,516	1,190,652	1,280,366	1,370,036	1,544,729	1,655,401	1,700,105
Non-Formula Areas (NASM)									
17.	Residential Space	520,716	536,874	575,808	584,118	630,660	808,758	843,940	867,611
18.	Animal Space	12,484	10,304	11,118	7,440	7,554	7,815	9,333	9,931
19.	Other	37,634	40,453	41,701	61,229	57,968	70,222	73,245	82,246
20.	Health Sci. Clinical Facilities	27,299	51,465	53,233	92,177	79,927	70,696	72,824	78,403
Subtotal - Non-Formula Areas		598,132	639,095	681,860	744,964	776,109	957,491	999,342	1,038,191
Total		3,729,423	3,850,067	3,931,653	4,137,013	4,355,265	4,959,638	5,191,879	5,292,963

See NOTES section on pages 9 and 10.

Table B

Percentage Change in Distribution of ACTUAL Space Inventory by COU Space Categories, 1977-78 to 1998-99

Cat. #	Space Category	1977-78 Inventory	1977-78 % Dist.	1983-84 Inventory	1983-84 % Dist.	1986-87 Inventory	1986-87 % Dist.	1998-99 Inventory	1998-99 % Dist.	% Change in Distribution (1977-78 to 1998-99)
Formula Areas (NASM)										
1.	Classroom Facilities	209,776	5.6%	215,897	5.5%	206,972	5.0%	260,194	4.9%	-0.7%
2.	Lab Undergrad	323,156	8.7%	332,034	8.4%	311,046	7.5%	325,353	6.1%	-2.5%
3.	Lab Grad & Faculty	230,534	6.2%	250,410	6.4%	300,052	7.3%	349,394	6.6%	0.4%
4.	Acad Office & Related	304,711	8.2%	335,637	8.5%	355,143	8.6%	490,985	9.3%	1.1%
5.	Library & Study Facilities	243,173	6.5%	264,178	6.7%	264,431	6.4%	325,471	6.1%	-0.4%
6.	Recreation/Athletic Space	127,976	3.4%	155,306	4.0%	153,520	3.7%	177,215	3.3%	-0.1%
7.	Food Service	92,991	2.5%	90,557	2.3%	92,746	2.2%	105,743	2.0%	-0.5%
8.	Bookstore & Merch. Facilities	26,572	0.7%	29,104	0.7%	28,694	0.7%	38,037	0.7%	0.0%
9.	Plant Maintenance	37,421	1.0%	37,064	0.9%	43,122	1.0%	52,434	1.0%	0.0%
10.	Admin. Office & Related	135,173	3.6%	149,336	3.8%	164,200	4.0%	200,089	3.8%	0.2%
11.	AV / TV Facilities	13,399	0.4%	14,182	0.4%	13,609	0.3%	12,983	0.2%	-0.1%
12.	Central Services	41,246	1.1%	43,435	1.1%	47,110	1.1%	53,180	1.0%	-0.1%
13.	Health Service Facilities	5,380	0.1%	5,231	0.1%	6,206	0.2%	7,286	0.1%	0.0%
14.	Student Activity Space	93,721	2.5%	89,472	2.3%	80,647	1.9%	101,491	1.9%	-0.6%
15.	Assembly, Exhibition Facilities	45,462	1.2%	47,298	1.2%	44,185	1.1%	54,812	1.0%	-0.2%
Subtotal - Formula Areas		1,930,691	51.8%	2,059,141	52.4%	2,111,683	51.0%	2,554,667	48.3%	-3.5%
16.	**Non-Assignable (SM)**	1,200,599	32.2%	1,190,652	30.3%	1,280,366	30.9%	1,700,105	32.1%	-0.1%
Non-Formula Areas (NASM)										
17.	Residential Space	520,716	14.0%	575,808	14.6%	584,118	14.1%	867,611	16.4%	2.4%
18.	Animal Space	12,484	0.3%	11,118	0.3%	7,440	0.2%	9,931	0.2%	-0.1%
19.	Other	37,634	1.0%	41,701	1.1%	61,229	1.5%	82,246	1.6%	0.5%
20.	Health Sci. Clinical Facilities	27,299	0.7%	53,233	1.4%	92,177	2.2%	78,403	1.5%	0.7%
Subtotal - Non-Formula Areas		598,132	16.0%	681,860	17.3%	744,964	18.0%	1,038,191	19.6%	3.6%
Total		3,729,423	100.0%	3,931,653	100.0%	4,137,013	100.0%	5,292,963	100.0%	

See NOTES section on pages 9 and 10.

Table C

Percentage Change in Distribution of ACTUAL Space Inventory by COU Formula Space Categories, 1977-78 to 1998-99

Cat. # Space Category	1977-78 Inventory	% Dist.	1983-84 Inventory	% Dist.	1986-87 Inventory	% Dist.	1998-99 Inventory	% Dist.	% Change in Distribution (1977-78 to 1998-99)
Formula Areas (NASM)									
1. Classroom Facilities	209,776	10.9%	215,897	10.5%	206,972	9.8%	260,194	10.2%	-0.7%
2. Lab Undergrad	323,156	16.7%	332,034	16.1%	311,046	14.7%	325,353	12.7%	-4.0%
3. Lab Grad & Faculty	230,534	11.9%	250,410	12.2%	300,052	14.2%	349,394	13.7%	1.7%
4. Acad Office & Related	304,711	15.8%	335,637	16.3%	355,143	16.8%	490,985	19.2%	3.4%
5. Library & Study Facilities	243,173	12.6%	264,178	12.8%	264,431	12.5%	325,471	12.7%	0.1%
6. Recreation/Athletic Space	127,976	6.6%	155,306	7.5%	153,520	7.3%	177,215	6.9%	0.3%
7. Food Service	92,991	4.8%	90,557	4.4%	92,746	4.4%	105,743	4.1%	-0.7%
8. Bookstore & Merch. Facilities	26,572	1.4%	29,104	1.4%	28,694	1.4%	38,037	1.5%	0.1%
9. Plant Maintenance	37,421	1.9%	37,064	1.8%	43,122	2.0%	52,434	2.1%	0.1%
10. Admin. Office & Related	135,173	7.0%	149,336	7.3%	164,200	7.8%	200,089	7.8%	0.8%
11. AV / TV Facilities	13,399	0.7%	14,182	0.7%	13,609	0.6%	12,983	0.5%	-0.2%
12. Central Services	41,246	2.1%	43,435	2.1%	47,110	2.2%	53,180	2.1%	-0.1%
13. Health Service Facilities	5,380	0.3%	5,231	0.3%	6,206	0.3%	7,286	0.3%	0.0%
14. Student Activity Space	93,721	4.9%	89,472	4.3%	80,647	3.8%	101,491	4.0%	-0.9%
15. Assembly, Exhibition Facilities	45,462	2.4%	47,298	2.3%	44,185	2.1%	54,812	2.1%	-0.2%
Subtotal - Formula Areas	1,930,691	100.0%	2,059,141	100.0%	2,111,683	100.0%	2,554,667	100.0%	

See NOTES section on pages 9 and 10.

Table D

Total ACTUAL Space Inventory (NASM) by Space Classification, 1977-78 to 1998-99

Cat. #	Space Classification	1977-78	1980-81	1983-84	1986-87	1989-90	1992-93	1995-96	1998-99
Formula Areas									
1	Classroom Facilities	209,776	210,269	212,434	206,972	218,568	247,913	256,078	260,194
2	Class Lab	323,156	331,267	332,034	311,046	308,474	321,919	326,708	323,541
3	Lab - Research Facilities	230,534	232,485	250,106	300,052	312,657	335,255	340,867	345,767
4	Academic Office and Related	304,711	311,910	326,471	298,472	382,202	457,342	463,055	490,985
10	Administrative Office	135,173	138,895	146,886	220,871	180,054	192,525	211,166	200,089
5	Library	243,173	256,235	259,548	264,431	280,579	318,214	326,963	325,471
6	Physical Education/Athletics	127,976	142,962	155,306	153,520	158,880	168,970	180,809	177,215
7-9, 11-15	Other *	356,191	353,432	349,839	356,319	360,060	406,136	419,910	425,966
Total - Formula Areas		1,930,691	1,977,456	2,032,624	2,111,683	2,201,474	2,448,274	2,525,556	2,549,228
FTE Students		170,587	170,835	192,624	192,838	215,184	248,792	241,098	240,986
Total Formula Areas (NASM) / FTE Students		11.3	11.6	10.6	11.0	10.2	9.8	10.5	10.6

* Includes Food Service, Bookstore & Merch. Facilities, Plant Maintenance, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, and Assembly/Exhibition Facilities.

In 1986-87, Academic Office was the sum of categories 4.1, 4.2, 4.3 and 4.5. Administrative Office was the sum of categories 4.4, 10.1 and 10.2.
Actual space figures do not include space where the discipline has not been categorized into Group A to E (for Class Labs) and Group W to Z (for Lab-Research). Therefore these numbers do not agree with Table A.

See NOTES section on pages 9 and 10.

Table E

Total GENERATED Space (NASM) by Space Classification, 1977-78 to 1998-99

Cat #	Space Classification	1977-78	1980-81	1983-84	1986-87	1989-90	1992-93	1995-96	1998-99
Formula Areas:									
1	Classroom Facilities	206,023	206,323	232,724	231,405	258,220	298,551	289,317	289,183
2	Class Lab	310,674	330,651	339,885	323,758	324,505	358,283	357,967	370,708
3	Lab - Research Facilities	256,306	251,128	281,617	327,236	352,848	391,027	403,446	409,887
4	Academic Office and Related	293,813	290,158	304,436	342,078	466,412	514,831	499,819	507,443
10	Administrative Office	142,632	142,839	161,116	220,927	162,467	165,790	162,436	148,131
5	Library	273,115	293,555	328,463	327,804	373,000	423,698	432,638	466,966
6	Physical Education/Athletics	162,086	164,129	184,107	187,554	203,665	242,913	236,988	234,887
7-9, 11-15	Other *	372,427	372,968	420,693	428,490	475,218	548,808	535,938	535,864
Total - Formula Areas		2,017,076	2,051,750	2,253,041	2,389,252	2,616,335	2,943,901	2,918,549	2,963,069
FTE Students		170,587	170,835	192,624	192,838	215,184	248,792	241,098	240,986
Total Formula Areas (NASM) / FTE Students		11.8	12.0	11.7	12.4	12.2	11.8	12.1	12.3

* Includes Food Service, Bookstore & Merch. Facilities, Plant Maintenance, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, and Assembly/Exhibition Facilities.

See NOTES section on pages 9 and 10.

Table F

Percentage Change in Distribution of GENERATED Space (NASM) by Space Classification
1977-78 and 1998-99

Cat. #	Category	1977-78 Generated Space	% Dist.	1983-84 Generated Space	% Dist.	1986-87 Generated Space	% Dist.	1998-99 Generated Space	% Dist.	% Change in Distribution (1977-78 to 1998-99)
Formula Areas										
1	Classroom Facilities	206,023	10.2%	232,724	10.3%	231,405	9.7%	289,183	9.8%	-0.5%
2	Class Lab Space	310,674	15.4%	339,885	15.1%	323,758	13.6%	370,708	12.5%	-2.9%
3	Lab - Research Facilities	256,306	12.7%	281,617	12.5%	327,236	13.7%	409,887	13.8%	1.1%
4	Academic Office and Related	293,813	14.6%	304,436	13.5%	342,078	14.3%	507,443	17.1%	2.6%
10	Administrative Office	142,632	7.1%	161,116	7.2%	220,927	9.2%	148,131	5.0%	-2.1%
5	Library	273,115	13.5%	328,463	14.6%	327,804	13.7%	466,966	15.8%	2.2%
6	Physical Education/Athletics	162,086	8.0%	184,107	8.2%	187,554	7.8%	234,887	7.9%	-0.1%
7-9, 11-15	Other *	372,427	18.5%	420,693	18.7%	428,490	17.9%	535,864	18.1%	-0.4%
Total - Formula Areas		2,017,076	100.0%	2,253,041	100.0%	2,389,252	100.0%	2,963,069	100.0%	

* Includes Food Service, Bookstore & Merch. Facilities, Plant Maintenance, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, and Assembly/Exhibition Facilities.

See NOTES section on pages 9 and 10.

Table G

ACTUAL Inventory / GENERATED Space (NASM) by Space Classification,
1977-78 and 1998-99

Cat. #	Space Classification	1977-78 Generated Space (G)	1977-78 Actual Inventory (I)	1977-78 % I/G	1998-99 Generated Space (G)	1998-99 Actual Inventory (I)	1998-99 % I/G
1	Classroom Facilities	206,023	209,776	101.8%	289,183	260,194	90.0%
2	Class Lab	310,674	323,156	104.0%	370,708	323,541	87.3%
3	Lab - Research Facilities	256,306	230,534	89.9%	409,887	345,767	84.4%
4	Academic Office and Related	293,813	304,711	103.7%	507,443	490,985	96.8%
10	Administrative Office	142,632	135,173	94.8%	148,131	200,089	135.1%
5	Library	273,115	243,173	89.0%	466,966	325,471	69.7%
6	Physical Education/Athletics	162,086	127,976	79.0%	234,887	177,215	75.4%
7-9, 11-15	Other *	372,427	356,191	95.6%	535,864	425,966	79.5%
Total - Formula Areas		2,017,076	1,930,691	95.7%	2,963,069	2,549,228	86.0%

* Includes Food Service, Bookstore & Merch. Facilities, Plant Maintenance, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, and Assembly/Exhibition Facilities.

See NOTES section on pages 9 and 10.

Table H

Ratio of ACTUAL Inventory to GENERATED Space (NASM) by Formula Space Classification,
1977-78 to 1998-99

Cat. #	Space Classification	1977-78	1980-81	1983-84	1986-87	1989-90	1992-93	1995-96	1998-99
1	Classroom Facilities	101.8	101.9	91.3	89.4	84.6	83.0	88.5	90.0
2	Class Lab	104.0	100.2	97.7	96.1	95.1	89.9	91.3	87.3
3	Lab - Research Facilities	89.9	92.6	88.8	91.7	88.6	85.7	84.5	84.4
4	Academic Office and Related	103.7	107.5	107.2	87.3	81.9	88.8	92.6	96.8
10	Administrative Office	94.8	97.2	91.2	100.0	110.8	116.1	130.0	135.1
5	Library	89.0	87.3	79.0	80.7	75.2	75.1	75.6	69.7
6	Physical Education/Athletics	79.0	87.1	84.4	81.9	78.0	69.6	76.3	75.4
7-9, 11-15	Other *	95.6	94.8	83.2	83.2	75.8	74.0	78.4	79.5
Total - Formula Areas		95.7	96.4	90.2	88.4	84.1	83.2	86.5	86.0

* Includes Food Service, Bookstore & Merch. Facilities, Plant Maintenance, Audio-Visual Television Facilities, Central Services, Health Service Facilities, Student Activity Space, and Assembly/Exhibition Facilities.

See NOTES section on pages 9 and 10.

HIGHLIGHTS (Figures)

Figure 1 – Actual Inventory (NASM) / Generated Space by Functional Areas (with NASM for each functional area), 1998-99

This figure shows the ratio between actual and generated space in major COU formula categories. The amount of space devoted to each category is also shown.

In the major academic areas (*Classrooms, Class Labs,* and *Research*) the shortfall is about 15%.

Student support functions (*Library, Physical Education, and Other (Student & Central Services)*) occupies less space than is generated.

Therefore, limited resources are being used to support the core teaching and research functions of the universities.

Figure 2 – Functional Breakdown of Formula Space Usage, 1998-99

This figure shows a breakdown of inventory in the COU formula categories (1 to 15). The diversity of university activity is reflected in the relative portions of the space categories.

Over 60% of the total formula space is accounted for by primary academic facilities *(Lab-Research, Library, Lab-Undergraduate, Academic Office and Classrooms*).

Academic and Administrative office space has been subdivided into three categories to show the differences in the types of activities in these two categories.

- *Academic Office* (4) includes faculty offices (4.1), other academic appointments (4.2) and graduate student offices (4.3).
- *Non-Academic Office* (4 and 10) includes academic departmental support staff offices (4.4) and administrative office areas (10.1).
- *Office Support* (4 and 10) includes academic office support space (4.5) and administrative office support areas (10.2).

Figure 3 – Percentage Distribution of Formula Inventory (NASM) Usage, 1977-78 to 1998-99

This figure reflects the actual space inventory in the COU formula categories (1 to 15). The formula categories provide for the full range of functions and services needed in a contemporary university. These categories were then aggregated into 8 functional groups.

Changes in the relative proportions are due to: (1) the inclusion of the federated / affiliated institutions in 1992-93, (2) the building of new facilities, and (3) the reallocation of space.

The figure shows that teaching facilities have been the greatest "losers" in terms of space, in the past 20 years. The percentage of actual inventory devoted to *Classrooms and Undergraduate Labs* have decreased from 28% in 1977-78 to 23% in 1998-99. *Lab-Research* space increased from 12% in 1977-78 to 14.4% in 1989-90 then decreased to 13.7% in 1998-99.

Figure 4 - % Actual Inventory / Generated Inventory by Selected Functional Area, 1977-78 to 1998-99

This figure compares the ratio of generated space to actual inventory in selected functional areas. The time series showing *Administrative* and *Academic* space start in 1986-87, due to the change in definition of input measures commencing in 1986-87.

The graphs show (with the exception of *Administrative office space)* that the generated inventory is greater that the actual inventory, which implies that the universities in Ontario are short of space.

Figure 5 – Total Actual Inventory / Generated Inventory

This figure shows the total actual inventory compared to the total generated inventory from 1977-78 to 1998-99.

In all years, the ratio is less than 100, which means that the actual inventory is less than the recommended (or generated) inventory according to COU space factors. This implies that the universities do not have adequate space.

Figure 5 – Average Age of Buildings

The average age of buildings for all Ontario universities system has increased from 14.6 years in 1977-78 to 30.0 years in 1998-99. The building age increased by 2 years between the 1995-96 and 1998-99 survey years.

Figure 1

Actual Inventory (NASM) / Generated Space by Functional Areas (with NASM for each functional area), 1998-99

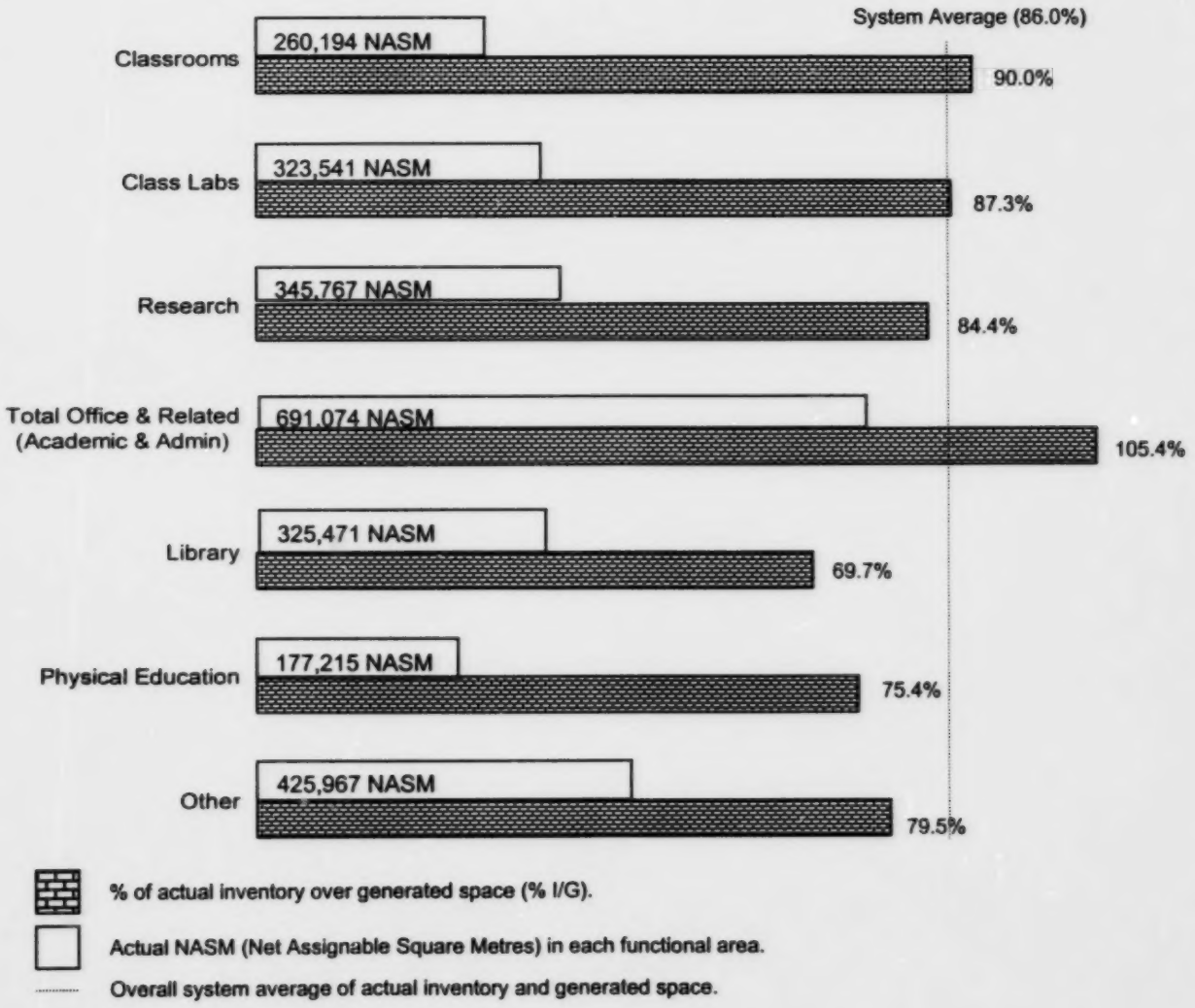
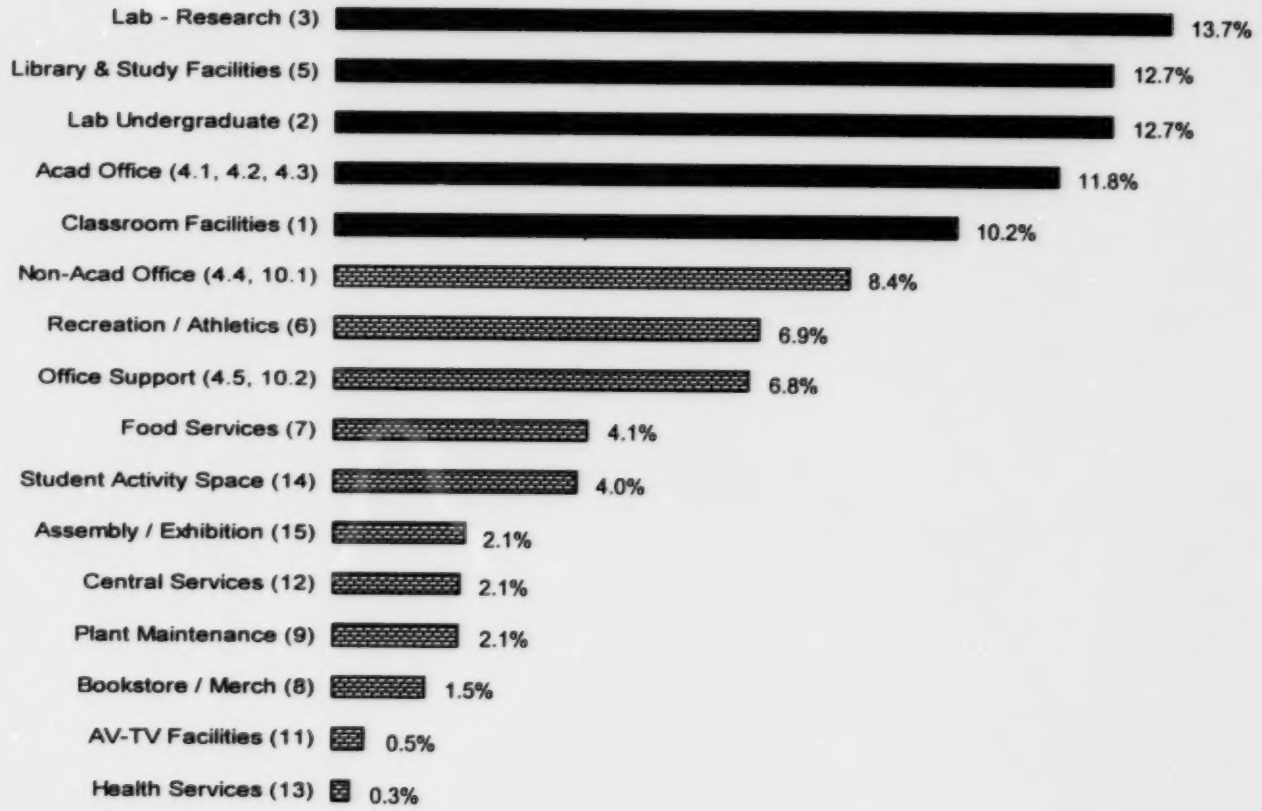


Figure 2

Functional Breakdown of Formula Space* Usage, 1998-99


Lab - Research (3) 13.7%
Library & Study Facilities (5) 12.7%
Lab Undergraduate (2) 12.7%
Acad Office (4.1, 4.2, 4.3) 11.8%
Classroom Facilities (1) 10.2%
Non-Acad Office (4.4, 10.1) 8.4%
Recreation / Athletics (6) 6.9%
Office Support (4.5, 10.2) 6.8%
Food Services (7) 4.1%
Student Activity Space (14) 4.0%
Assembly / Exhibition (15) 2.1%
Central Services (12) 2.1%
Plant Maintenance (9) 2.1%
Bookstore / Merch (8) 1.5%
AV-TV Facilities (11) 0.5%
Health Services (13) 0.3%

* Formula space is usable or assignable space for which space standards could normally be developed. The formula categories provide for the full range of functions and services needed in a contemporary university.

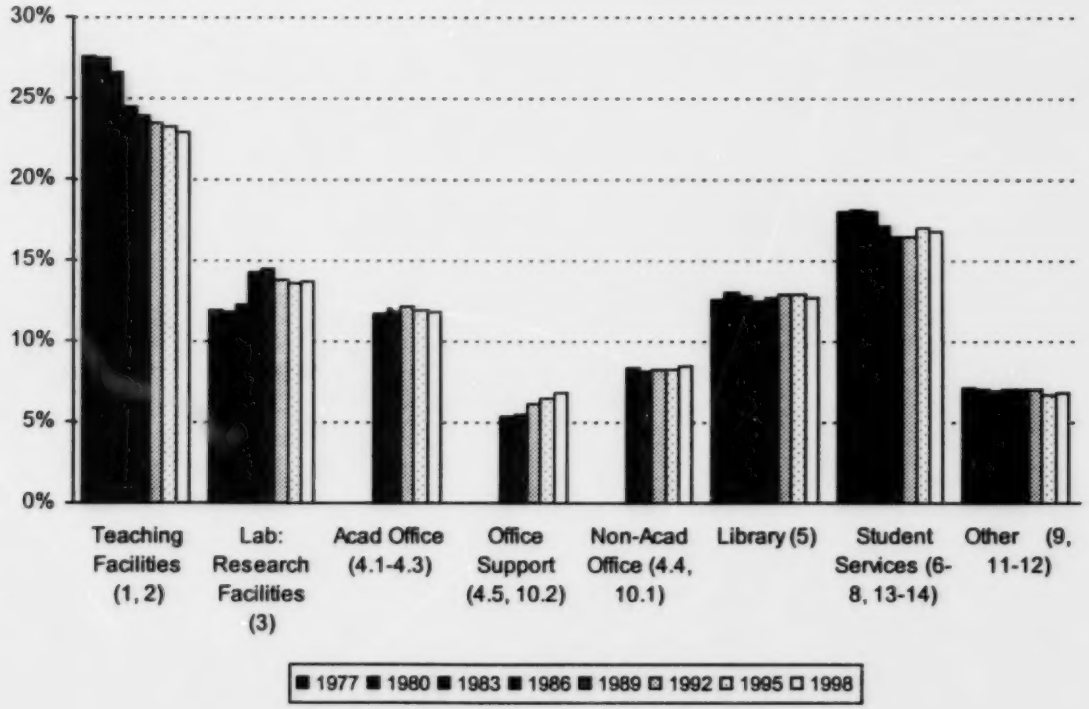
The first five categories refer to primary academic facilities.

The figures in brackets refer to the space category.

Total Formula Space = 2,554,669 NASM.

Figure 3

Percentage Distribution of ACTUAL Space Inventory (NASM) Usage for Formula Areas, 1977-78 to 1998-99



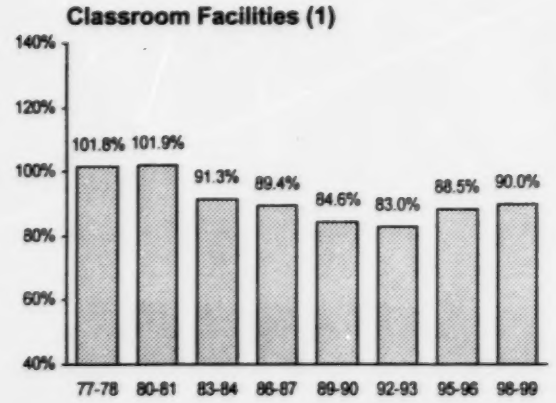
* Formula space is usable or assignable space for which space standards could normally be developed.

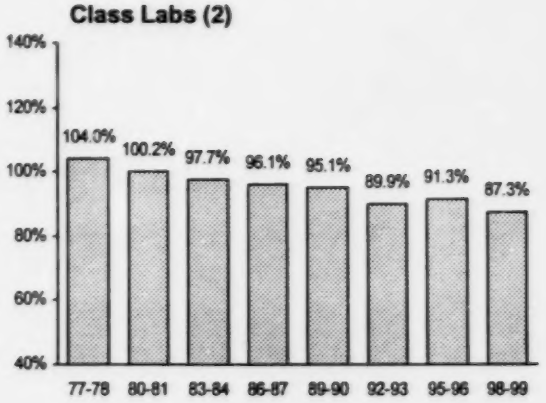
Teaching Facilities: Classroom and Lab Undergraduate
Student Services: Athletic/Recreation, Food Service, Bookstore, Health Service Facilities, Common Use/Student Activity
Other: AV/TV, Assembly/Exhibition Facilities, Plant Maintenance, Central Services

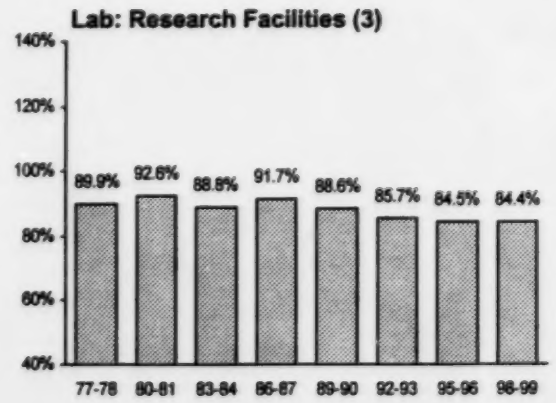
Prior to 1986-87, data not available for Acad. Office, Office Support and Non-Acad. Office.

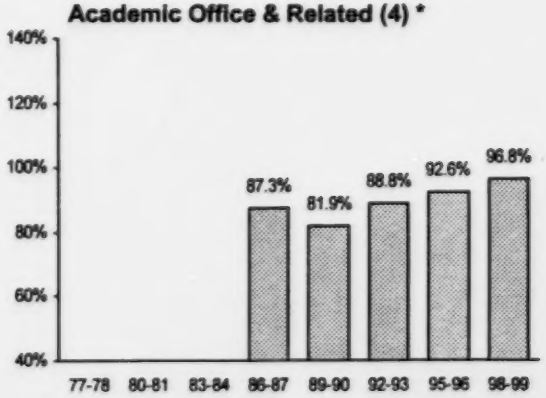
Figure 4

% Actual Inventory / Generated Inventory by Selected Functional Area 1977-78 to 1998-99





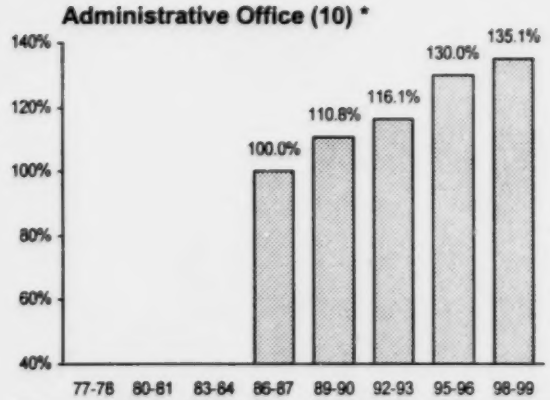




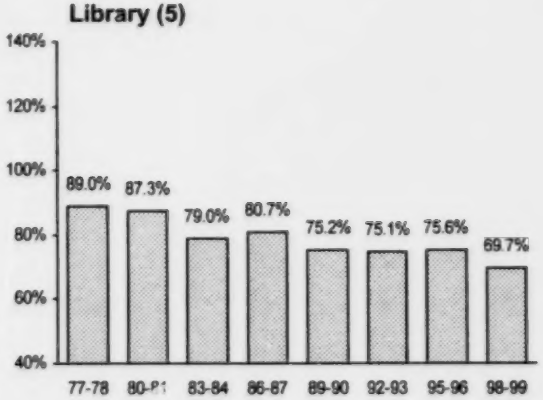
* Commencing in 1986-87, the input measure and space factor changed, so comparisons prior to 1986-87 are not possible.

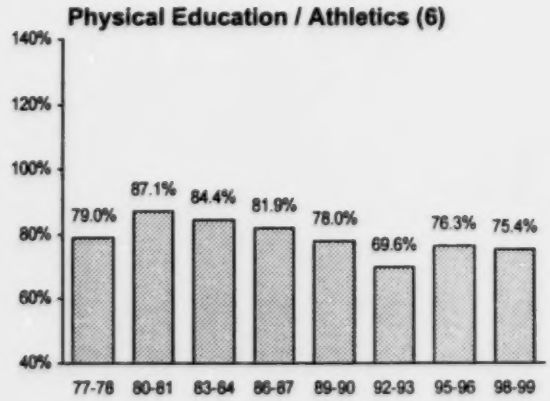
Figure 4 (cont'd)

% Actual Inventory / Generated Inventory by Selected Functional Area 1977-78 to 1998-99



* Commencing in 1986-87, the input measure and space factor changed, so comparisons prior to 1986-87 are not possible.





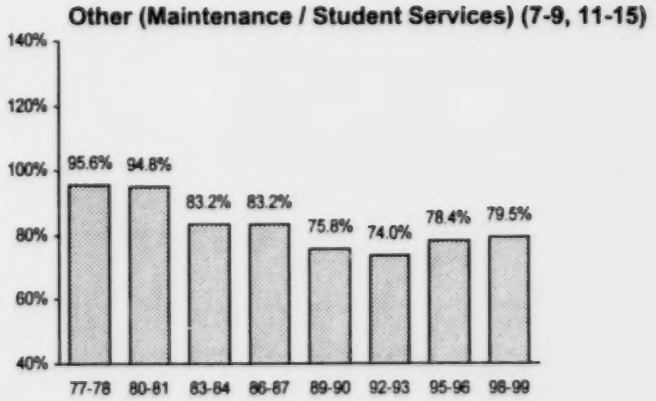
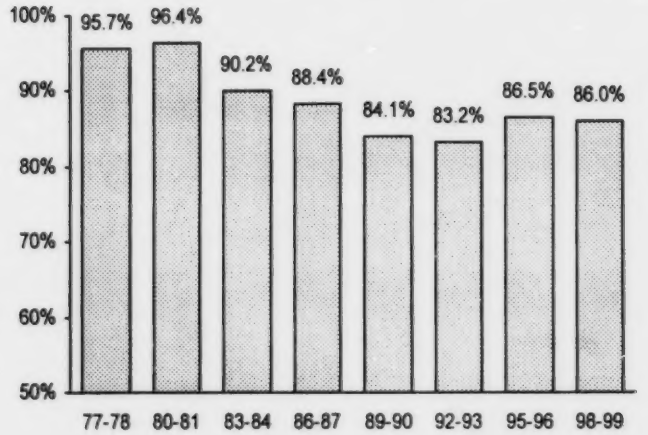


Figure 5

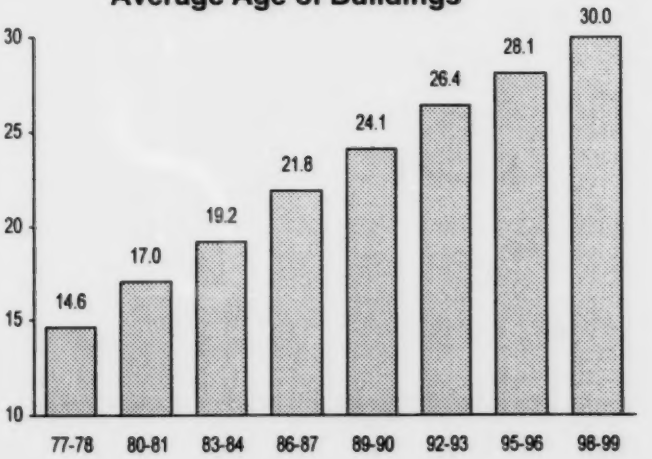
Total Actual Inventory / Generated Inventory and Average Age of Buildings 1977-78 to 1998-99

Total Actual Inventory / Generated Inventory



Year	Actual Inventory	Generated Inventory
1977-78	1,930,691	2,017,076
1980-81	1,977,456	2,051,750
1983-84	2,032,624	2,253,041
1986-87	2,111,683	2,389,252
1989-90	2,201,474	2,616,335
1992-93	2,448,275	2,943,901
1995-96	2,525,555	2,918,549
1998-99	2,549,230	2,963,070

Average Age of Buildings



Section 3

INSTITUTIONAL TABLES

(as a result of the 1998-99 survey)

In interpreting the data from smaller and specialized institutions, it should be noted that the Building Blocks formula was developed for institutions having a full range of university programs and functions. The application of all 15 categories to a very small or special purpose institution may not be appropriate, so results must be interpreted with caution. The same considerations apply in the formula for analysis at the departmental level within an institution.

Table 1

Inventory of University Space, November 1, 1998

Institution	Categories 1-15 (NASM)	Category 16 (SM)	Categories 17-20 (NASM)	Scheduled for Demolition	Rentals	Gross Square Metres	Under Construction	Gross Sq. Metres / NASM (1-15, 17-20)
Brock	53,172.10	44,513.80	31,027.30	0.00	0.00	138,100.00	0.00	1.64
Carleton	121,584.10	75,614.30	34,782.30	0.00	0.00		0.00	
Guelph	184,556.03	134,021.90	106,929.14	1,418.82	0.00	504,630.84	0.00	1.73
Lakehead	54,673.10	33,113.00	31,955.00	0.00	0.00	141,830.60	0.00	1.64
Laurentian	61,527.37	36,901.32	23,695.19	0.00	3,209.60	134,169.91	0.00	1.57
Laurentian (Algo)	9,232.87	0.00	1,376.90	0.00	0.00	13,702.13	109.90	1.29
Laurentian (Hear)	4,967.26	1,355.76	1,914.77	0.00	480.30	6,879.03	0.00	1.00
McMaster	174,218.06	98,871.76	102,066.60	0.00	0.00	446,841.72	0.00	1.62
Nipissing	14,611.00	5,134.00	9,898.00	0.00	0.00		0.00	
OCAD	10,838.60	3,847.10	0.00	0.00	1,191.01	14,685.70	5,100.00	1.35
Ottawa	174,959.43	131,257.31	44,037.46	3,076.86	1,141.10	413,035.30	0.00	1.89
Queen's	203,237.50	143,232.60	92,823.60	7,834.80	0.00	513,439.50	7,500.00	1.73
Ryerson	104,139.70	19,484.60	21,818.20	0.00	813.10	224,434.00	0.00	1.78
Toronto (St. Grge)	471,550.78	329,657.73	119,156.26	12,885.53	4,207.15	1,082,033.00	40,354.00	1.83
Toronto (Miss)	37,890.21	28,203.00	18,662.72	0.00	0.00	96,988.00	0.00	1.71
Toronto (Scar)	31,803.37	22,801.00	11,694.99	0.00	0.00	76,823.00	0.00	1.77
Trent	39,124.00	26,690.08	20,507.49	0.00	189.14		0.00	
Waterloo	196,183.06	135,507.80	99,359.76	0.00	2,095.43	486,336.51	0.00	1.65
Western	248,185.00	147,630.00	110,925.00	0.00	0.00	592,164.00	21,450.00	1.65
WLU	57,019.00	35,003.00	29,171.00	0.00	842.00	121,193.00	0.00	1.41
Windsor	107,414.87	55,819.82	32,387.02	0.00	306.53	241,431.14	0.00	1.73
York (Main)	180,599.85	178,277.00	86,804.77	0.00	0.00	474,725.00	0.00	1.78
York (Glen)	15,480.94	12,238.00	8,253.44	0.00	0.00	41,653.00	0.00	1.75
TOTAL	2,556,968.20	1,699,174.88	1,039,246.91	25,216.01	14,475.36	5,765,095.38	74,513.90	1.72

The inventory NASM figures for categories 1-15, 16 and 17-20 may not necessarily agree at some institutions with the inventory figures reported on Table 2.

Carleton, Nipissing and Trent did not report Gross Square Metres figures, therefore the total excludes these institutions.

Under Construction figures are reported on a gross basis.

Table 2

Distribution of Actual Inventory by Major Space Category and Institution, 1998-99

	Classroom Facilities (1)	Lab Undergrad (2)	Lab Grad & Faculty (3)	Acad Office & Related (4)	Library & Study Facilities (5)	Recreation/ Athletic Space (6)	Food Service (7)	Bookstore & Merch Facilities (8)	Plant Mainten-ance (9)	Admin Office & Related (10)	AV / TV Facilities (11)	Central Services (12)
Brock	6,025	5,884	4,691	7,380	6,944	6,843	3,062	810	1,485	4,357	243	1,456
Carleton	12,232	17,664	10,756	27,444	14,879	9,433	6,467	1,973	1,804	8,954	1,363	1,414
Guelph	11,697	22,699	44,254	29,921	13,181	15,866	8,097	2,269	4,992	20,542	461	3,482
Lakehead	6,188	11,884	4,452	6,604	6,290	4,601	2,998	723	1,172	3,830	271	1,378
Laurentian	6,238	6,447	4,908	9,840	9,112	6,139	3,254	949	2,096	4,872	401	2,082
Laurentian (Algo)	834	611	0	429	2,242	3,282	175	87	216	453	0	388
Laurentian (Hear)	666	521	0	269	446	710	266	23	641	274	61	10
McMaster	14,440	19,833	35,328	30,636	24,777	8,344	5,188	2,260	4,690	13,511	690	4,240
Nipissing	1,969	2,457	179	1,257	1,779	688	852	0	0	1,212	230	277
OCAD	1,861	5,740	0	536	519	0	21	655	91	812	127	15
Ottawa	20,049	19,735	24,299	39,600	20,851	7,067	4,149	1,862	905	22,541	984	2,822
Queen's	18,698	26,068	32,382	40,914	26,232	14,440	8,059	3,024	3,321	13,881	246	4,524
Ryerson	14,135	31,179	3,601	12,706	7,834	6,270	4,828	1,202	2,194	8,530	1,222	3,636
Toronto (St.Grge)	44,780	45,637	78,843	107,973	78,990	27,411	14,771	3,309	7,912	23,659	1,168	7,246
Toronto (Miss)	4,964	5,915	5,659	5,352	4,206	2,395	2,372	549	741	1,891	173	1,305
Toronto (Scar)	3,246	5,247	3,577	4,230	3,282	3,968	1,678	370	1,093	1,843	172	1,011
Trent	4,679	3,561	2,934	5,296	7,184	3,309	3,193	561	609	4,045	137	704
Waterloo	17,284	24,770	34,587	37,192	17,687	11,706	10,998	3,216	5,577	14,106	658	7,246
Western	28,850	32,937	31,212	44,527	32,180	15,434	10,007	4,801	5,944	22,955	872	4,135
WLU	6,136	4,735	1,828	8,053	7,896	6,421	1,662	991	1,115	8,502	557	1,237
Windsor	10,137	14,719	12,092	17,130	15,340	10,307	4,539	2,031	1,909	7,996	1,873	1,609
York (Main)	22,850	16,665	13,599	49,933	21,814	9,675	7,998	6,087	3,586	10,924	1,058	2,690
York (Glen)	2,215	445	214	3,762	1,805	2,907	1,109	285	343	400	16	274
TOTAL	260,194	325,353	349,394	490,985	325,471	177,215	105,743	38,037	52,434	200,089	12,983	53,180

Table 2 (cont'd)

Distribution of Actual Inventory by Major Space Category and Institution, 1998-99

	Health Service Facilties (13)	Student Activity Space (14)	Assembly, Exhibition Facilities (15)	Subtotal Formula Areas (1 to 15)	Residential Space (17)	Animal Space (18)	Other (19)	Health Sci Clinical Facilities (20)	Subtotal Non-Formula (17 to 20)	Non-Assignable (16)	Total (1 to 20)
Brock	70	1,779	2,144	53,172	30,639	0	388	0	31,027	44,514	128,713
Carleton	545	4,616	2,042	121,584	30,140	457	4,185	0	34,782	75,614	231,981
Guelph	479	3,894	2,721	184,556	88,773	3,175	8,890	6,091	106,929	134,046	425,531
Lakehead	180	2,934	1,167	54,673	28,292	0	3,663	0	31,955	33,113	119,741
Laurentian	212	2,751	2,225	61,527	22,120	199	1,192	184	23,695	36,901	122,123
Laurentian (Algo)	0	347	168	9,233	1,377	0	0	0	1,377	370	10,979
Laurentian (Hear)	0	365	231	4,484	426	0	1,488	0	1,915	1,356	7,754
McMaster	449	6,260	3,572	174,218	45,257	1,346	2,604	52,860	102,067	98,872	375,157
Nipissing	0	828	0	11,748	9,781	117	0	0	9,898	5,134	26,780
OCAD	19	157	285	10,839	0	0	0	0	0	3,847	14,686
Ottawa	692	6,067	3,337	174,959	39,644	1,387	3,007	0	44,037	131,257	350,254
Queen's	1,091	7,238	3,485	203,603	77,748	1,743	7,503	5,397	92,391	143,233	439,226
Ryerson	149	4,641	2,013	104,139	18,720	0	2,460	0	21,181	19,485	144,804
Toronto (St.Grge)	1,098	16,795	12,820	472,413	78,625	0	30,046	10,928	119,599	330,188	922,200
Toronto (Miss)	113	1,498	757	37,890	18,027	0	635	0	18,663	28,203	84,756
Toronto (Scar)	93	1,430	564	31,803	10,861	0	834	0	11,695	22,801	66,299
Trent	126	2,786	0	39,124	18,783	0	1,293	0	20,076	26,690	85,890
Waterloo	514	7,426	3,221	196,186	95,079	0	3,475	810	99,364	135,513	431,064
Western	1,013	7,523	5,614	248,004	100,565	1,508	6,719	2,132	110,924	147,631	506,559
WLU	133	5,169	2,584	57,019	28,299	0	872	0	29,171	35,003	121,193
Windsor	295	6,177	1,260	107,414	31,996	0	391	0	32,387	55,819	195,620
York (Main)	14	9,704	4,002	180,600	84,806	0	1,998	0	86,805	178,277	445,682
York (Glen)	0	1,105	601	15,481	7,652	0	602	0	8,253	12,238	35,973
TOTAL	7,286	101,491	54,812	2,554,669	867,611	9,931	82,246	78,403	1,038,191	1,700,105	5,292,965

Table 2A

Percent Distribution of Actual Inventory by Major Formula Space Category and Institution, 1998-99

	Classroom Facilities (1)	Lab Undergrd (2)	Lab Grad & Faculty (3)	Acad Office & Related (4)	Library & Study Facilities (5)	Recreatn/ Athletic Space (6)	Food Service (7)	Bookstore & Merch Facilities (8)	Plant Mainten-ance (9)	Admin Office & Related (10)	AV / TV Facilities (11)	Central Services (12)	Health Service Facilties (13)	Student Activity Space (14)	Assembly & Exhibitn Facilities (15)	Formula Areas (1 to 15)
Brock	11%	11%	9%	14%	13%	13%	6%	2%	3%	8%	0%	3%	0%	3%	4%	100%
Carleton	10%	15%	9%	23%	12%	8%	5%	2%	1%	7%	1%	1%	0%	4%	2%	100%
Guelph	6%	12%	24%	16%	7%	9%	4%	1%	3%	11%	0%	2%	0%	2%	1%	100%
Lakehead	11%	22%	8%	12%	12%	8%	5%	1%	2%	7%	0%	3%	0%	5%	2%	100%
Laurentian	10%	10%	8%	16%	15%	10%	5%	2%	3%	8%	1%	3%	0%	4%	4%	100%
Laurentian (Algo)	9%	7%	0%	5%	24%	36%	2%	1%	2%	5%	0%	4%	0%	4%	2%	100%
Laurentian (Hear)	15%	12%	0%	6%	10%	16%	6%	1%	14%	6%	1%	0%	0%	8%	5%	100%
McMaster	8%	11%	20%	18%	14%	5%	3%	1%	3%	8%	0%	2%	0%	4%	2%	100%
Nipissing	17%	21%	2%	11%	15%	6%	7%	0%	0%	10%	2%	2%	0%	7%	0%	100%
OCAD	17%	53%	0%	5%	5%	0%	0%	6%	1%	7%	1%	0%	0%	1%	3%	100%
Ottawa	11%	11%	14%	23%	12%	4%	2%	1%	1%	13%	1%	2%	0%	3%	2%	100%
Queen's	9%	13%	16%	20%	13%	7%	4%	1%	2%	7%	0%	2%	1%	4%	2%	100%
Ryerson	14%	30%	3%	12%	8%	6%	5%	1%	2%	8%	1%	3%	0%	4%	2%	100%
Toronto (St.Grge)	9%	10%	17%	23%	17%	6%	3%	1%	2%	5%	0%	2%	0%	4%	3%	100%
Toronto (Miss)	13%	16%	15%	14%	11%	6%	6%	1%	2%	5%	0%	3%	0%	4%	2%	100%
Toronto (Scar)	10%	16%	11%	13%	10%	12%	5%	1%	3%	6%	1%	3%	0%	4%	2%	100%
Trent	12%	9%	7%	14%	18%	8%	8%	1%	2%	10%	0%	2%	0%	7%	0%	100%
Waterloo	9%	13%	18%	19%	9%	6%	6%	2%	3%	7%	0%	4%	0%	4%	2%	100%
Western	12%	13%	13%	18%	13%	6%	4%	2%	2%	9%	0%	2%	0%	3%	2%	100%
WLU	11%	8%	3%	14%	14%	11%	3%	2%	2%	15%	1%	2%	0%	9%	5%	100%
Windsor	9%	14%	11%	16%	14%	10%	4%	2%	2%	7%	2%	1%	0%	6%	1%	100%
York (Main)	13%	9%	8%	28%	12%	5%	4%	3%	2%	6%	1%	1%	0%	5%	2%	100%
York (Glen)	14%	3%	1%	24%	12%	19%	7%	2%	2%	3%	0%	2%	0%	7%	4%	100%
TOTAL	10%	13%	14%	19%	13%	7%	4%	1%	2%	8%	1%	2%	0%	4%	2%	100%

Table 2B

Percent Distribution of Actual Inventory by Major Space Category and Institution, 1998-99

	Formula (1 to 15)	*Non-Formula* Residential Space (17)	Animal Space (18)	Other (19)	Hlth Sci Clin Facil. (20)	*Non-Formula* (17 to 20)	*Non-Assignable* (16)	*Total* (1 to 20)
Brock	41%	24%	0%	0%	0%	24%	35%	100%
Carleton	52%	13%	0%	2%	0%	15%	33%	100%
Guelph	43%	21%	1%	2%	1%	25%	32%	100%
Lakehead	46%	24%	0%	3%	0%	27%	28%	100%
Laurentian	50%	18%	0%	1%	0%	19%	30%	100%
Laurentian (Algo)	84%	13%	0%	0%	0%	13%	3%	100%
Laurentian (Hear)	58%	5%	0%	19%	0%	25%	17%	100%
McMaster	46%	12%	0%	1%	14%	27%	26%	100%
Nipissing	44%	37%	0%	0%	0%	37%	19%	100%
OCAD	74%	0%	0%	0%	0%	0%	26%	100%
Ottawa	50%	11%	0%	1%	0%	13%	37%	100%
Queen's	46%	18%	0%	2%	1%	21%	33%	100%
Ryerson	72%	13%	0%	2%	0%	15%	13%	100%
Toronto (St.Grge)	51%	9%	0%	3%	1%	13%	36%	100%
Toronto (Miss)	45%	21%	0%	1%	0%	22%	33%	100%
Toronto (Scar)	48%	16%	0%	1%	0%	18%	34%	100%
Trent	46%	22%	0%	2%	0%	23%	31%	100%
Waterloo	46%	22%	0%	1%	0%	23%	31%	100%
Western	49%	20%	0%	1%	0%	22%	29%	100%
WLU	47%	23%	0%	1%	0%	24%	29%	100%
Windsor	55%	16%	0%	0%	0%	17%	29%	100%
York (Main)	41%	19%	0%	0%	0%	19%	40%	100%
York (Glen)	43%	21%	0%	2%	0%	23%	34%	100%
TOTAL	48%	16%	0%	2%	1%	20%	32%	100%

Table 3

Age Profile of Ontario University Space
(as of 1 November, 1998) *

Institution	0-9 Years (NASM)	10-19 Years (NASM)	20-29 Years (NASM)	30-39 Years (NASM)	40-49 Years (NASM)	50+ Years (NASM)	Total (NASM)	Weighted Average Age
Brock	6,827	3,847	30,863	11,510	0	126	53,172	24.3
Carleton	18,811	6,303	36,993	59,478	0	0	121,584	26.3
Guelph	20,281	1,857	39,832	63,776	18,352	40,458	184,556	39.4
Lakehead	14,195	77	26,607	8,990	4,576	228	54,673	23.6
Laurentian	14,846	481	17,170	24,635	0	1,187	58,318	24.7
Laurentian (Algo)	6,597	257	0	401	0	1,977	9,233	20.3
Laurentian (Hear)	0	0	0	0	4,487	0	4,487	36.1
McMaster	12,510	1,519	65,649	74,692	13,402	6,446	174,218	30.7
Nipissing	3,789	55	10,767	0	0	0	14,611	19.9
OCAD	655	0	4,496	4,496	0	0	9,648	21.2
Ottawa	11,656	24,973	68,609	9,980	34,033	24,568	173,818	35.1
Queen's	23,098	17,912	100,494	39,025	11,551	11,158	203,238	27.2
Ryerson	8,943	23,348	40,355	19,897	10,784	0	103,327	24.2
Toronto (St. Grge)	24,137	57,747	135,007	151,939	20,358	78,156	467,344	36.8
Toronto (Miss)	1,896	0	35,559	436	0	0	37,890	26.3
Toronto (Scar)	226	0	31,522	55	0	0	31,803	27.0
Trent	7,533	0	20,312	8,392	0	2,698	38,935	28.3
Waterloo	1,886	35,129	48,982	100,341	7,749	0	194,088	27.5
Western	46,676	10,008	65,830	83,637	29,238	12,796	248,185	28.1
WLU	14,733	19,424	11,257	9,110	1,653	0	56,177	18.1
Windsor	13,224	7,889	38,504	36,482	3,810	7,200	107,108	28.2
York (Main)	32,448	7,143	80,531	60,478	0	0	180,600	24.7
York (Glen)	247	0	0	13,807	0	1,427	15,481	38.2
TOTAL	285,214	217,968	909,338	781,555	159,993	188,426	2,542,493	30.0

* Categories 1-15 only, excluding Rentals.

This table shows that the average age of Ontario university buildings is 30 years, the age when it is generally recognized that major building com need to be renewed. The guidelines for reporting of building age in the COU space survey specify that major renovations which substantially ren be reflected in the age reported, but there are some concerns that adjustments are not always done consistently.

Table 4
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

SYSTEM SUMMARY

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	*1995-96 % I / G*
CLASSROOMS						
Total FTE Students	240,985.7	1.2	289,182.8	260,194.3	90.0	*88.5*
CLASS LABS						
Lab Contact Hours W	73,792.3	0.8	59,033.8	47,648.7		
Lab Contact Hours X	383,356.1	0.6	230,013.7	203,406.7		
Lab Contact Hours Y	103,684.5	0.5	51,842.3	42,056.5		
Lab Contact Hours Z	99,395.0	0.3	29,818.5	30,429.5		
Total Class Lab	660,227.9		370,708.3	323,541.4	87.3	*91.3*
RESEARCH						
Research Disciplines A	5,513.4	45.0	248,103.9	219,725.0		
Research Disciplines B	2,867.0	30.0	86,009.7	79,438.1		
Research Disciplines C	1,948.6	20.0	38,972.4	24,393.9		
Research Disciplines D	2,175.8	10.0	21,758.1	13,674.7		
Research Disciplines E	15,043.1	1.0	15,043.1	8,534.9		
Total Research	27,548.0		409,887.2	345,766.6	84.4	*84.5*
OFFICE - ACADEMIC						
Total FTE Faculty	12,727.1	13.0	165,452.1	236,539.9	124.3	
Faculty Supplement	1,909.1	13.0	24,817.8			
Total FTE Grads	27,812.1	4.0	111,248.2	66,124.2	59.4	*62.1*
Total FTE Non-Acd Staff	6,832.5	13.0	88,822.5	86,491.0	97.4	
Office Service	390,340.7	0.3	117,102.2	101,830.1	87.0	
Total Academic Office			507,442.9	490,985.2	96.8	*92.6*
OFFICE - ADMINISTRATIVE						
Total FTE Non-Acd Staff	8,765.2	13.0	113,947.2	128,512.2	112.8	
Office Service	113,947.2	0.3	34,184.2	71,577.1	209.4	
Total Admin. Office			148,131.4	200,089.2	135.1	*130.0*
Total Office			655,574.3	691,074.4	105.4	*98.2*
LIBRARY						
10% of Total Eq. Volumes	n/a		n/a	n/a		
Next 300,000	n/a		n/a	n/a		
Next 300,000	n/a		n/a	n/a		
Remainder	n/a		n/a	n/a		
Total Stack	45,599,732.9		240,732.0	162,699.8	67.6	*74.2*
FTE UG - Excl. Prof.	199,602.9	0.5	99,801.4			
FTE UG - Professional	13,570.9	1.0	13,570.9			
FTE Grads	27,812.1	0.7	19,468.4			
Total Study	240,985.8		132,840.7	89,696.4	67.5	*69.2*
Library Support	373,572.7	0.3	93,393.2	73,074.8	78.2	*88.8*
Total Library			466,965.8	325,471.0	69.7	*75.6*
PHYSICAL EDUCATION/ATHLETICS						
Under 4,000 FTE Enrol.	n/a		n/a	n/a		
4,000-8,000 Enrol.	n/a		n/a	n/a		
Total FTE Students	240,985.7	0.9				
Total P.E./Athletics			234,887.1	177,214.9	75.4	*76.3*
MAINTENANCE SHOPS						
Total NASM Inv. (exc. 16.0)	3,592,861.6	0.0	53,892.9	52,434.2	97.3	*94.7*
STUDENT AND CENTRAL SERVICES						
Total FTE Students	240,985.7	2.0	481,971.3	373,533.1	77.5	*76.5*
TOTAL FORMULA AREAS			2,963,069.8	2,549,229.9	86.0	*86.5*

Table 5
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

BROCK

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	7,842.92	1.2	9,411 50	6,025.00	64.0	90.0	*64.4*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	9,246.00	0.6	5,547.60	3,693.30			
Lab Contact Hours Y	3,297.00	0.5	1,648.50	1,195.30			
Lab Contact Hours Z	4,879.50	0.3	1,463.85	829.50			
Total Class Lab			8,659.95	5,718.10	66.0	87.3	*54.1*
RESEARCH							
Research Disciplines A	77.60	45.0	3,492.00	3,529.00			
Research Disciplines B	34.35	30.0	1,030.50	688.90			
Research Disciplines C	18.30	20.0	366.00	270.00			
Research Disciplines D	38.20	10.0	382.00	146.20			
Research Disciplines E	374.15	1.0	374.15	56.40			
Total Research			5,644.65	4,690.50	83.1	84.4	*90.8*
OFFICE - ACADEMIC							
Total FTE Faculty	392.00	13.0	5,096.00	3,977.30	67.9	124.3	
Faculty Supplement	58.80	13.0	764.40				
Total FTE Grads	285.20	4.0	1,140.80	614.30	53.8	59.4	*55.7*
Total FTE Non-Acd Staff	102.20	13.0	1,328.60	1,183.70	89.1	97.4	
Office Service	8,329.80	0.3	2,498.94	1,605.00	64.2	87.0	
Total Academic Office			10,828.74	7,380.30	68.2	96.8	*68.5*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	255.60	13.0	3,322.80	3209.6	96.6	112.8	
Office Service	3,322.80	0.3	996.84	1147.4	115.1	209.4	
Total Admin. Office			4,319.64	4,357.00	100.9	135.1	*87.7*
Total Office			15,148.38	11,737.30	77.5	105.4	*74.3*
LIBRARY							
10% of Total Eq. Volumes	101,097.58	0.004	404.39				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	309,878.26	0.005	1,549.39				
Total Stack	1,010,975.84		5,853.78	3,840.70	65.6	67.6	*69.9*
FTE UG - Excl. Prof.	6,997.55	0.5	3,498.78				
FTE UG - Professional	560.15	1.0	560.15				
FTE Grads	285.20	0.7	199.64				
Total Study	7,842.90		4,258.57	2,084.70	49.0	67.5	*50.4*
Library Support	10,112.35	0.25	2,528.09	1,018.90	40.3	78.2	*42.3*
Total Library			12,640.43	6,944.30	54.9	69.7	*57.7*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	7,842.92		1,000.00				
Total FTE Students	7,842.92	0.9	7,058.63				
Total P.E./Athletics			8,058.63	6,842.70	84.9	75.4	*84.6*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	84,199.40	0.015	1,262.99	1,484.60	117.5	97.3	*69.2*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	7,842.92	2.0	15,685.84	9,563.70	61.0	77.5	*59.0*
TOTAL FORMULA AREAS			76,512.38	53,006.20	69.3	86.0	*66.8*

Table 6
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

CARLETON

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	13,169.60	1.2	15,803.52	12,232.10	77.4	90.0	*68.6*
CLASS LABS							
Lab Contact Hours W	9,115.00	0.8	7,292.00	3,222.60			
Lab Contact Hours X	14,280.50	0.6	8,568.30	11,429.30			
Lab Contact Hours Y	1,341.00	0.5	670.50	553.10			
Lab Contact Hours Z	3,426.00	0.3	1,027.80	2,458.60			
Total Class Lab			17,558.60	17,663.60	100.6	87.3	*108.0*
RESEARCH							
Research Disciplines A	135.55	45.0	6,099.75	5,361.20			
Research Disciplines B	200.03	30.0	6,000.75	2,748.10			
Research Disciplines C	158.73	20.0	3,174.50	1,324.50			
Research Disciplines D	125.10	10.0	1,251.00	443.80			
Research Disciplines E	988.61	1.0	988.61	878.20			
Total Research			17,514.61	10,755.80	61.4	84.4	*56.1*
OFFICE - ACADEMIC							
Total FTE Faculty	613.98	13.0	7,981.74	12,391.00	135.0	124.3	
Faculty Supplement	92.10	13.0	1,197.26				
Total FTE Grads	1,918.90	4.0	7,675.60	5,926.90	77.2	59.4	*71.1*
Total FTE Non-Acd Staff	248.71	13.0	3,233.23	3,409.40	105.4	97.4	
Office Service	20,087.83	0.3	6,026.35	5,717.00	94.9	87.0	
Total Academic Office			26,114.18	27,444.30	105.1	96.8	*94.3*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	508.72	13.0	6,613.36	5,119.90	77.4	112.8	
Office Service	6,613.36	0.3	1,984.01	3,833.80	193.2	209.4	
Total Admin. Office			8,597.37	8,953.70	104.1	135.1	*105.0*
Total Office			34,711.55	36,398.00	104.9	105.4	*96.7*
LIBRARY							
10% of Total Eq. Volumes	208,066.23	0.004	832.26				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	1,272,596.11	0.005	6,362.98				
Total Stack	2,080,662.35		11,095.25	4,962.70	44.7	67.6	*43.2*
FTE UG - Excl. Prof.	11,250.70	0.5	5,625.35				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	1,918.90	0.7	1,343.23				
Total Study	13,169.60		6,968.58	6,063.50	87.0	67.5	*86.8*
Library Support	18,063.83	0.25	4,515.96	3,852.70	85.3	78.2	*83.7*
Total Library			22,579.78	14,878.90	65.9	69.7	*66.3*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	13,169.60	0.9	11,852.64				
Total P.E./Athletics			11,852.64	9,432.70	79.6	75.4	*69.1*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	156,366.40	0.015	2,345.50	1,803.90	76.9	97.3	*77.2*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	13,169.60	2.0	26,339.20	18,419.20	69.9	77.5	*60.4*
TOTAL FORMULA AREAS			148,705.39	121,584.20	81.8	86.0	*75.9*

Table 7
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

GUELPH

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	12,562.82	1.2	15,075.39	11,697.40	77.6	90.0	*85.2*
CLASS LABS							
Lab Contact Hours W	16,278.30	0.8	13,022.64	8,604.58			
Lab Contact Hours X	32,641.00	0.6	19,584.60	10,722.60			
Lab Contact Hours Y	3,567.50	0.5	1,783.75	1,413.11			
Lab Contact Hours Z	11,308.50	0.3	3,392.55	1,932.31			
Total Class Lab			37,783.54	22,672.60	60.0	87.3	*65.0*
RESEARCH							
Research Disciplines A	769.26	45.0	34,616.70	39,962.49			
Research Disciplines B	48.95	30.0	1,468.50	1,166.40			
Research Disciplines C	92.17	20.0	1,843.40	1,153.21			
Research Disciplines D	108.14	10.0	1,081.40	1,017.85			
Research Disciplines E	434.93	1.0	434.93	743.76			
Total Research			39,444.93	44,043.71	111.7	84.4	*117.0*
OFFICE - ACADEMIC							
Total FTE Faculty	664.25	13.0	8,635.25	11,899.40	119.8	124.3	
Faculty Supplement	99.64	13.0	1,295.29				
Total FTE Grads	1,518.10	4.0	6,072.40	5,887.89	97.0	59.4	*88.1*
Total FTE Non-Acd Staff	256.85	13.0	3,339.05	6,567.55	196.7	97.4	
Office Service	19,341.99	0.3	5,802.60	5,566.26	95.9	87.0	
Total Academic Office			25,144.58	29,921.10	119.0	96.8	*109.4*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	488.74	13.0	6,353.62	12,880.65	202.7	112.8	
Office Service	6,353.62	0.3	1,906.09	7,661.49	401.9	209.4	
Total Admin. Office			8,259.71	20,542.14	248.7	135.1	*209.2*
Total Office			33,404.29	50,463.24	151.1	105.4	*134.9*
LIBRARY							
10% of Total Eq. Volumes	286,875.54	0.004	1,147.50				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	1,981,879.86	0.005	9,909.40				
Total Stack	2,868,755.40		14,956.90	6,740.92	45.1	67.6	*58.8*
FTE UG - Excl. Prof.	10,645.72	0.5	5,322.86				
FTE UG - Professional	399.00	1.0	399.00				
FTE Grads	1,518.10	0.7	1,062.67				
Total Study	12,562.82		6,784.53	3,885.07	57.3	67.5	*81.8*
Library Support	21,741.43	0.25	5,435.36	2,554.91	47.0	78.2	*68.6*
Total Library			27,176.79	13,180.90	48.5	69.7	*67.3*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	12,562.82	0.9	11,306.54				
Total P.E./Athletics			11,306.54	15,866.43	140.3	75.4	*151.3*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	291,485.19	0.015	4,372.28	4,991.68	114.2	97.3	*112.3*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	12,562.82	2.0	25,125.64	21,403.69	85.2	77.5	*86.4*
TOTAL FORMULA AREAS			193,689.40	184,319.65	95.2	86.0	*100.3*

Table 8
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

LAKEHEAD

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	5,710.53	1.2	6,852.64	6,188.30	90.3	90.0	*83.2*
CLASS LABS							
Lab Contact Hours W	2,424.00	0.8	1,939.20	2,504.30			
Lab Contact Hours X	12,782.00	0.6	7,669.20	6,034.42			
Lab Contact Hours Y	5,923.50	0.5	2,961.75	2,771.71			
Lab Contact Hours Z	2,334.00	0.3	700.20	574.02			
Total Class Lab			13,270.35	11,884.45	89.6	87.3	*98.4*
RESEARCH							
Research Disciplines A	49.19	45.0	2,213.55	2,277.10			
Research Disciplines B	88.05	30.0	2,641.50	1,535.00			
Research Disciplines C	24.28	20.0	485.60	613.70			
Research Disciplines D	28.84	10.0	288.40	0.00			
Research Disciplines E	245.90	1.0	245.90	26.50			
Total Research			5,874.95	4,452.30	75.8	84.4	*64.5*
OFFICE - ACADEMIC							
Total FTE Faculty	306.81	13.0	3,988.53	4,378.30	95.5	124.3	
Faculty Supplement	46.02	13.0	598.28				
Total FTE Grads	252.90	4.0	1,011.60	813.30	80.4	59.4	*70.2*
Total FTE Non-Acd Staff	84.40	13.0	1,097.20	754.20	68.7	97.4	
Office Service	6,695.61	0.3	2,008.68	658.00	32.8	87.0	
Total Academic Office			8,704.29	6,603.80	75.9	96.8	*75.7*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	305.70	13.0	3,974.10	2,388.00	60.1	112.8	
Office Service	3,974.10	0.3	1,192.23	1,442.30	121.0	209.4	
Total Admin. Office			5,166.33	3,830.30	74.1	135.1	*84.1*
Total Office			13,870.62	10,434.10	75.2	105.4	*78.4*
LIBRARY							
10% of Total Eq. Volumes	82,931.18	0.004	331.72				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	146,380.58	0.005	731.90				
Total Stack	829,311.76		4,963.63	3,022.40	60.9	67.6	*67.3*
FTE UG - Excl. Prof.	5,275.62	0.5	2,637.81				
FTE UG - Professional	182.01	1.0	182.01				
FTE Grads	252.90	0.7	177.03				
Total Study	5,710.53		2,996.85	2,130.20	71.1	67.5	*54.4*
Library Support	7,960.48	0.25	1,990.12	1,137.60	57.2	78.2	*56.1*
Total Library			9,950.60	6,290.20	63.2	69.7	*60.8*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	5,710.53		1,000.00				
Total FTE Students	5,710.53	0.9	5,139.48				
Total P.E./Athletics			6,139.48	4,600.50	74.9	75.4	*69.2*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	86,628.00	0.015	1,299.42	1,172.30	90.2	97.3	*105.5*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	5,710.53	2.0	11,421.06	9,651.00	84.5	77.5	*76.4*
TOTAL FORMULA AREAS			68,679.11	54,673.15	79.6	86.0	*77.7*

Table 9
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

LAURENTIAN

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	4,567.57	1.2	5,481.08	6,238.22	113.8	90.0	*84.6*
CLASS LABS							
Lab Contact Hours W	567.00	0.8	453.60	1,234.94			
Lab Contact Hours X	6,360.50	0.6	3,816.30	3,582.31			
Lab Contact Hours Y	1,290.00	0.5	645.00	949.34			
Lab Contact Hours Z	138.00	0.3	41.40	465.66			
Total Class Lab			4,956.30	6,232.25	125.7	87.3	*112.6*
RESEARCH							
Research Disciplines A	102.14	45.0	4,596.08	3,107.53			
Research Disciplines B	54.74	30.0	1,642.05	625.67			
Research Disciplines C	18.20	20.0	364.00	116.60			
Research Disciplines D	28.30	10.0	283.00	190.21			
Research Disciplines E	329.65	1.0	329.65	868.44			
Total Research			7,214.78	4,908.45	68.0	84.4	*76.2*
OFFICE - ACADEMIC							
Total FTE Faculty	389.50	13.0	5,063.50	6,330.73	108.7	124.3	
Faculty Supplement	58.43	13.0	759.53				
Total FTE Grads	263.73	4.0	1,054.92	353.42	33.5	59.4	*42.1*
Total FTE Non-Acd Staff	71.00	13.0	923.00	1,165.96	126.3	97.4	
Office Service	7,800.95	0.3	2,340.28	1,990.30	85.0	87.0	
Total Academic Office			10,141.23	9,840.41	97.0	96.8	*95.1*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	211.00	13.0	2,743.00	3,511.45	128.0	112.8	
Office Service	2,743.00	0.3	822.90	1,360.35	165.3	209.4	
Total Admin. Office			3,565.90	4,871.80	136.6	135.1	*163.9*
Total Office			13,707.13	14,712.21	107.3	105.4	*113.0*
LIBRARY							
10% of Total Eq. Volumes	107,972.06	0.004	431.89				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	371,748.58	0.005	1,858.74				
Total Stack	1,079,720.65		6,190.63	4,582.25	74.0	67.6	*70.1*
FTE UG - Excl. Prof.	4,167.84	0.5	2,083.92				
FTE UG - Professional	136.00	1.0	136.00				
FTE Grads	263.73	0.7	184.61				
Total Study	4,567.57		2,404.53	3,319.88	138.1	67.5	*89.9*
Library Support	8,595.16	0.25	2,148.79	1,210.36	56.3	78.2	*72.8*
Total Library			10,743.96	9,112.49	84.8	69.7	*75.8*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	4,567.57		1,000.00				
Total FTE Students	4,567.57	0.9	4,110.81				
Total P.E./Athletics			5,110.81	6,138.56	120.1	75.4	*96.1*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	85,222.55	0.015	1,278.34	2,095.94	164.0	97.3	*195.1*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	4,567.57	2.0	9,135.14	11,873.96	130.0	77.5	*91.0*
TOTAL FORMULA AREAS			57,627.53	61,312.08	106.4	86.0	*94.7*

Table 10
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

ALGOMA

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	380.00	1.2	456.00	834.44	183.0	90.0	*106.8*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	168.00	0.6	100.80	195.91			
Lab Contact Hours Y	0.00	0.5	0.00	0.00			
Lab Contact Hours Z	799.00	0.3	239.70	415.29			
Total Class Lab			340.50	611.20	179.5	87.3	*171.3*
RESEARCH							
Research Disciplines A	1.67	45.0	75.15	0.00			
Research Disciplines B	6.50	30.0	195.00	0.00			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	7.00	10.0	70.00	0.00			
Research Disciplines E	36.65	1.0	36.65	0.00			
Total Research			376.80	0.00	n/a	84.4	*n/a*
OFFICE - ACADEMIC							
Total FTE Faculty	51.82	13.0	673.66	335.68	43.3	124.3	
Faculty Supplement	7.77	13.0	101.05				
Total FTE Grads	0.00	4.0	0.00	0.00		59.4	*n/a*
Total FTE Non-Acd Staff	18.00	13.0	234.00	41.97	17.9	97.4	
Office Service	1,008.71	0.3	302.61	51.81	17.1	87.0	
Total Academic Office			1,311.32	429.46	32.8	96.8	*34.9*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	23.00	13.0	299.00	351.92	117.7	112.8	
Office Service	299.00	0.3	89.70	101.47	113.1	209.4	
Total Admin. Office			388.70	453.39	116.6	135.1	*120.8*
Total Office			1,700.02	882.85	51.9	105.4	*55.5*
LIBRARY							
10% of Total Eq. Volumes	1,286.77	0.004	5.15				
Next 300,000	127,390.41	0.007	891.73				
Next 300,000	0.00	0.006	0.00				
Remainder	0.00	0.005	0.00				
Total Stack	128,677.18		896.88	1,313.74	146.5	67.6	*94.9*
FTE UG - Excl. Prof.	380.00	0.5	190.00				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	0.00	0.7	0.00				
Total Study	380.00		190.00	325.46	171.3	67.5	*100.0*
Library Support	1,086.88	0.25	271.72	602.62	221.8	78.2	*140.9*
Total Library			1,358.60	2,241.82	165.0	69.7	*104.8*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	380.00		2,000.00				
4,000-8,000 Enrol.	0.00						
Total FTE Students	380.00	0.9	342.00				
Total P.E./Athletics			2,342.00	3,281.88	140.1	75.4	*126.9*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	10,610.00	0.015	159.15	215.55	135.4	97.3	*83.1*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	380.00	2.0	760.00	1,165.07	153.3	77.5	*89.5*
TOTAL FORMULA AREAS			7,493.07	9,232.81	123.2	86.0	*98.1*

Data not provided for Class Labs (Inventory and Input Measure) and non-academic office staff; 1995-96 data used.

Table 11
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

HEARST

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	105.60	1.2	126.72	665.59	525.2	90.0	*254.8*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	180.00	0.6	108.00	122.10			
Lab Contact Hours Y	240.00	0.5	120.00	135.70			
Lab Contact Hours Z	777.00	0.3	233.10	263.50			
Total Class Lab			461.10	521.30	113.1	87.3	*100.0*
RESEARCH							
Research Disciplines A	1.00	45.0	45.00	0.00			
Research Disciplines B	3.00	30.0	90.00	0.00			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	1.00	10.0	10.00	0.00			
Research Disciplines E	15.00	1.0	15.00	0.00			
Total Research			160.00	0.00	n/a	84.4	*n/a*
OFFICE - ACADEMIC							
Total FTE Faculty	20.00	13.0	260.00	212.67	71.1	124.3	
Faculty Supplement	3.00	13.0	39.00				
Total FTE Grads	0.00	4.0	0.00	0.00	n/a	59.4	*n/a*
Total FTE Non-Acd Staff	11.00	13.0	143.00	0.00	n/a	97.4	
Office Service	442.00	0.3	132.60	56.80	42.8	87.0	
Total Academic Office			574.60	269.47	46.9	96.8	*49.2*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	7.00	13.0	91.00	186.87	205.4	112.8	
Office Service	91.00	0.3	27.30	87.53	320.6	209.4	
Total Admin. Office			118.30	274.40	232.0	135.1	*162.4*
Total Office			692.90	543.87	78.5	105.4	*71.8*
LIBRARY							
10% of Total Eq. Volumes	5,471.58	0.004	21.89				
Next 300,000	49,244.24	0.007	344.71				
Next 300,000	0.00	0.006	0.00				
Remainder	0.00	0.005	0.00				
Total Stack	54,715.82		366.60	320.46	87.4	67.6	*92.0*
FTE UG - Excl. Prof.	105.60	0.5	52.80				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	0.00	0.7	0.00				
Total Study	105.60		52.80	41.89	79.3	67.5	*25.9*
Library Support	419.40	0.25	104.85	83.67	79.8	78.2	*65.6*
Total Library			524.25	446.02	85.1	69.7	*69.9*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	105.60		2,000.00				
4,000-8,000 Enrol.	0.00						
Total FTE Students	105.60	0.9	95.04				
Total P.E./Athletics			2,095.04	709.85	33.9	75.4	*31.0*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	6,399.00	0.015	95.99	640.64	667.4	97.3	*633.9*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	105.60	2.0	211.20	956.59	452.9	77.5	*129.8*
TOTAL FORMULA AREAS			4,367.19	4,483.86	102.7	86.0	*84.9*

1995-96 data was used for Class Labs (Inventory and Input Measure) and FTE Faculty.

Table 12
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

McMASTER

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	14,459.40	1.2	17,351.28	14,440.00	83.2	90.0	*83.8*
CLASS LABS							
Lab Contact Hours W	6,156.50	0.8	4,925.20	2,224.30			
Lab Contact Hours X	21,849.60	0.6	13,109.76	12,248.36			
Lab Contact Hours Y	5,415.90	0.5	2,707.95	4,438.90			
Lab Contact Hours Z	7,544.00	0.3	2,263.20	921.20			
Total Class Lab			23,006.11	19,832.76	86.2	87.3	*87.4*
RESEARCH							
Research Disciplines A	531.55	45.0	23,919.75	20,660.57			
Research Disciplines B	184.95	30.0	5,548.50	11,413.20			
Research Disciplines C	180.95	20.0	3,619.00	2,773.70			
Research Disciplines D	122.30	10.0	1,223.00	444.48			
Research Disciplines E	809.05	1.0	809.05	36.23			
Total Research			35,119.30	35,328.18	100.6	84.4	*93.7*
OFFICE - ACADEMIC							
Total FTE Faculty	843.40	13.0	10,964.20	13,936.40	110.5	124.3	
Faculty Supplement	126.51	13.0	1,644.63				
Total FTE Grads	1,734.80	4.0	6,939.20	4,887.20	70.4	59.4	*69.2*
Total FTE Non-Acd Staff	520.40	13.0	6,765.20	7,051.60	104.2	97.4	
Office Service	26,313.23	0.3	7,893.97	4,760.50	60.3	87.0	
Total Academic Office			34,207.20	30,635.70	89.6	96.8	*94.4*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	680.40	13.0	8,845.20	10,268.30	116.1	112.8	
Office Service	8,845.20	0.3	2,653.56	3,243.10	122.2	209.4	
Total Admin. Office			11,498.76	13,511.40	117.5	135.1	*113.4*
Total Office			45,705.96	44,147.10	96.6	105.4	*99.2*
LIBRARY							
10% of Total Eq. Volumes	276,904.01	0.004	1,107.62				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	1,892,136.10	0.005	9,460.68				
Total Stack	2,769,040.11		14,468.30	14,557.80	100.6	67.6	*104.7*
FTE UG - Excl. Prof.	12,133.30	0.5	6,066.65				
FTE UG - Professional	591.40	1.0	591.40				
FTE Grads	1,734.80	0.7	1,214.36				
Total Study	14,459.50		7,872.41	4,363.20	55.4	67.5	*54.1*
Library Support	22,340.71	0.25	5,585.18	5,856.40	104.9	78.2	*107.6*
Total Library			27,925.88	24,777.40	88.7	69.7	*90.3*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	14,459.40	0.9	13,013.46				
Total P.E./Athletics			13,013.46	8,343.90	64.1	75.4	*63.7*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	276,284.70	0.015	4,144.27	4,689.90	113.2	97.3	*117.9*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	14,459.40	2.0	28,918.80	22,658.90	78.4	77.5	*82.1*
TOTAL FORMULA AREAS			195,185.06	174,218.14	89.3	86.0	*89.6*

Table 13
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

NIPISSING

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	2,059.74	1.2	2,471.69	1,989.00	80.5	90.0	*72.5*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	1,503.00	0.6	901.80	395.00			
Lab Contact Hours Y	15,639.00	0.5	7,819.50	1,990.00			
Lab Contact Hours Z	834.00	0.3	250.20	72.00			
Total Class Lab			8,971.50	2,457.00	27.4	87.3	*25.7*
RESEARCH							
Research Disciplines A	1.50	45.0	67.50	60.00			
Research Disciplines B	7.00	30.0	210.00	11.00			
Research Disciplines C	6.50	20.0	130.00	53.00			
Research Disciplines D	11.00	10.0	110.00	11.00			
Research Disciplines E	92.55	1.0	92.55	5.00			
Total Research			610.05	140.00	22.9	84.4	*n/a*
OFFICE - ACADEMIC							
Total FTE Faculty	95.00	13.0	1,235.00	933.00	65.7	124.3	
Faculty Supplement	14.25	13.0	185.25				
Total FTE Grads	47.10	4.0	188.40	0.00	n/a	59.4	*n/a*
Total FTE Non-Acd Staff	18.00	13.0	234.00	159.00	67.9	97.4	
Office Service	1,842.65	0.3	552.80	165.00	29.8	87.0	
Total Academic Office			2,395.45	1,257.00	52.5	96.8	*47.5*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	62.00	13.0	806.00	1,110.00	137.7	112.8	
Office Service	806.00	0.3	241.80	102.00	42.2	209.4	
Total Admin. Office			1,047.80	1,212.00	115.7	135.1	*92.5*
Total Office			3,443.25	2,469.00	71.7	105.4	*61.4*
LIBRARY							
10% of Total Eq. Volumes	20,185.02	0.004	80.74				
Next 300,000	181,665.15	0.007	1,271.66				
Next 300,000	(0.00)	0.006	(0.00)				
Remainder	0.00	0.005	0.00				
Total Stack	201,850.17		1,352.40	1,351.00	99.9	67.6	*111.6*
FTE UG - Excl. Prof.	1,423.71	0.5	711.86				
FTE UG - Professional	588.93	1.0	588.93				
FTE Grads	47.10	0.7	32.97				
Total Study	2,059.74		1,333.76	0.00	n/a	67.5	*n/a*
Library Support	2,686.15	0.25	671.54	428.00	63.7	78.2	*72.8*
Total Library			3,357.69	1,779.00	53.0	69.7	*60.5*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	2,059.74		2,000.00				
4,000-8,000 Enrol.	0.00						
Total FTE Students	2,059.74	0.9	1,853.77				
Total P.E./Athletics			3,853.77	688.00	17.9	75.4	*18.7*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	21,646.00	0.015	324.69	0.00	n/a	97.3	*n/a*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	2,059.74	2.0	4,119.48	2,187.00	53.1	77.5	*49.0*
TOTAL FORMULA AREAS			27,152.11	11,709.00	43.1	86.0	*41.1*

Table 14
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

ONTARIO COLLEGE OF ART & DESIGN

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	1,926.40	1.2	2,311.68	1,861.29	80.5	90.0	*72.3*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	23,679.00	0.6	14,207.40	5,740.28			
Lab Contact Hours Y	0.00	0.5	0.00	0.00			
Lab Contact Hours Z	0.00	0.3	0.00	0.00			
Total Class Lab			14,207.40	5,740.28	40.4	87.3	*44.6*
RESEARCH							
Research Disciplines A	0.00	45.0	0.00	0.00			
Research Disciplines B	0.00	30.0	0.00	0.00			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	36.00	10.0	360.00	0.00			
Research Disciplines E	20.00	1.0	20.00	0.00			
Total Research			380.00	0.00	n/a	84.4	*n/a*
OFFICE - ACADEMIC							
Total FTE Faculty	56.00	13.0	728.00	358.85	42.9	124.3	
Faculty Supplement	8.40	13.0	109.20				
Total FTE Grads	0.00	4.0	0.00	0.00	n/a	59.4	*n/a*
Total FTE Non-Acd Staff	8.00	13.0	104.00	165.90	159.5	97.4	
Office Service	941.20	0.3	282.36	11.05	3.9	87.0	
Total Academic Office			1,223.56	535.80	43.8	96.8	*33.3*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	56.87	13.0	739.31	448.24	60.6	112.8	
Office Service	739.31	0.3	221.79	363.89	164.1	209.4	
Total Admin. Office			961.10	812.13	84.5	135.1	*154.3*
Total Office			2,184.66	1,347.93	61.7	105.4	*59.8*
LIBRARY							
10% of Total Eq. Volumes	7,091.23	0.004	28.36				
Next 300,000	63,821.05	0.007	446.75				
Next 300,000	0.00	0.006	0.00				
Remainder	0.00	0.005	0.00				
Total Stack	70,912.27		475.11	359.50	75.7	67.6	*83.7*
FTE UG - Excl. Prof.	1,926.40	0.5	963.20				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	0.00	0.7	0.00				
Total Study	1,926.40		963.20	69.36	7.2	67.5	*11.2*
Library Support	1,438.31	0.25	359.58	89.74	25.0	78.2	*16.2*
Total Library			1,797.89	518.60	28.8	69.7	*30.7*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	1,926.40		2,000.00				
4,000-8,000 Enrol.	0.00						
Total FTE Students	1,926.40	0.9	1,733.76				
Total P.E./Athletics			3,733.76	0.00	n/a	75.4	*n/a*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	10,839.00	0.015	162.59	91.38	56.2	97.3	*102.9*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	1,926.40	2.0	3,852.80	1,279.12	33.2	77.5	*30.8*
TOTAL FORMULA AREAS			28,630.78	10,838.60	37.9	86.0	*40.2*

Table 15
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

OTTAWA

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	19,017.00	1.2	22,820.40	20,049.16	87.9	90.0	*89.6*
CLASS LABS							
Lab Contact Hours W	4,017.50	0.8	3,214.00	3,150.93			
Lab Contact Hours X	20,210.00	0.6	12,126.00	9,584.16			
Lab Contact Hours Y	7,993.10	0.5	3,996.55	4,308.83			
Lab Contact Hours Z	8,455.80	0.3	2,536.74	2,651.65			
Total Class Lab			21,873.29	19,695.57	90.0	87.3	*95.8*
RESEARCH							
Research Disciplines A	431.25	45.0	19,406.25	16,952.48			
Research Disciplines B	226.20	30.0	6,786.00	3,713.87			
Research Disciplines C	136.90	20.0	2,738.00	898.92			
Research Disciplines D	144.80	10.0	1,448.00	1,867.31			
Research Disciplines E	1,533.50	1.0	1,533.50	866.44			
Total Research			31,911.75	24,299.02	76.1	84.4	*80.3*
OFFICE - ACADEMIC							
Total FTE Faculty	1,028.80	13.0	13,374.40	18,073.06	117.5	124.3	
Faculty Supplement	154.32	13.0	2,006.16				
Total FTE Grads	2,787.00	4.0	11,148.00	4,775.36	42.8	59.4	*42.7*
Total FTE Non-Acd Staff	436.30	13.0	5,671.90	8,100.46	142.8	97.4	
Office Service	32,200.46	0.3	9,660.14	8,651.17	89.6	87.0	
Total Academic Office			41,860.60	39,600.05	94.6	96.8	*95.5*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	715.60	13.0	9,302.80	14,180.03	152.4	112.8	
Office Service	9,302.80	0.3	2,790.84	8,360.63	299.6	209.4	
Total Admin. Office			12,093.64	22,540.66	186.4	135.1	*149.0*
Total Office			53,954.24	62,140.71	115.2	105.4	*108.7*
LIBRARY							
10% of Total Eq. Volumes	327,070.50	0.004	1,308.28				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	2,343,634.47	0.005	11,718.17				
Total Stack	3,270,704.97		16,926.45	14,021.75	82.8	67.6	*80.4*
FTE UG - Excl. Prof.	14,104.00	0.5	7,052.00				
FTE UG - Professional	2,126.00	1.0	2,126.00				
FTE Grads	2,787.00	0.7	1,950.90				
Total Study	19,017.00		11,128.90	2,594.46	23.3	67.5	*33.0*
Library Support	28,055.35	0.25	7,013.84	4,235.00	60.4	78.2	*61.8*
Total Library			35,069.19	20,851.21	59.5	69.7	*61.3*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	19,017.00	0.9	17,115.30				
Total P.E./Athletics			17,115.30	7,066.74	41.3	75.4	*42.1*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	218,996.87	0.015	3,284.95	904.57	27.5	97.3	*30.2*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	19,017.00	2.0	38,034.00	19,912.90	52.4	77.5	*54.5*
TOTAL FORMULA AREAS			224,063.12	174,919.88	78.1	86.0	*78.8*

Table 16
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

QUEEN'S

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	14,572.94	1.2	17,487.53	18,698.00	106.9	90.0	*106.5*
CLASS LABS							
Lab Contact Hours W	4,376.25	0.8	3,501.00	5,859.70			
Lab Contact Hours X	29,690.00	0.6	17,814.00	15,834.60			
Lab Contact Hours Y	4,320.00	0.5	2,160.00	3,821.00			
Lab Contact Hours Z	2,779.00	0.3	833.70	552.80			
Total Class Lab			24,308.70	26,068.10	107.2	87.3	*100.5*
RESEARCH							
Research Disciplines A	493.06	45.0	22,187.70	20,473.40			
Research Disciplines B	213.29	30.0	6,398.70	6,565.50			
Research Disciplines C	120.17	20.0	2,403.30	3,189.00			
Research Disciplines D	181.04	10.0	1,810.40	1,506.60			
Research Disciplines E	1,115.22	1.0	1,115.22	647.10			
Total Research			33,915.32	32,381.60	95.5	84.4	*88.4*
OFFICE - ACADEMIC							
Total FTE Faculty	822.52	13.0	10,692.76	24,257.20	197.3	124.3	
Faculty Supplement	123.38	13.0	1,603.91				
Total FTE Grads	2,268.90	4.0	9,075.60	2,653.60	29.2	59.4	*76.8*
Total FTE Non-Acd Staff	316.14	13.0	4,109.82	5,013.70	122.0	97.4	
Office Service	25,482.09	0.3	7,644.63	8,989.30	117.6	87.0	
Total Academic Office			33,126.72	40,913.80	123.5	96.8	*108.8*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	826.69	13.0	10,746.97	8,965.10	83.4	112.8	
Office Service	10,746.97	0.3	3,224.09	4,915.70	152.5	209.4	
Total Admin. Office			13,971.06	13,880.80	99.4	135.1	*130.1*
Total Office			47,097.78	54,794.60	116.3	105.4	*113.9*
LIBRARY							
10% of Total Eq. Volumes	339,174.42	0.004	1,356.70				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	2,452,569.81	0.005	12,262.85				
Total Stack	3,391,744.23		17,519.55	10,899.50	62.2	67.6	*54.8*
FTE UG - Excl. Prof.	10,674.44	0.5	5,337.22				
FTE UG - Professional	1,629.60	1.0	1,629.60				
FTE Grads	2,268.90	0.7	1,588.23				
Total Study	14,572.94		8,555.05	8,561.40	100.1	67.5	*120.3*
Library Support	26,074.60	0.25	6,518.65	6,770.70	103.9	78.2	*96.2*
Total Library			32,593.24	26,231.60	80.5	69.7	*81.6*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	14,572.94	0.9	13,115.64				
Total P.E./Athletics			13,115.64	14,440.20	110.1	75.4	*108.4*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	295,994.00	0.015	4,439.91	3,321.30	74.8	97.3	*76.3*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	14,572.94	2.0	29,145.88	27,667.40	94.9	77.5	*94.1*
TOTAL FORMULA AREAS			202,104.00	203,602.80	100.7	86.0	*98.1*

Table 17
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

RYERSON

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	14,078.20	1.2	16,893.84	14,135.10	83.7	90.0	*87.8*
CLASS LABS							
Lab Contact Hours W	10,248.00	0.8	8,198.40	6,132.50			
Lab Contact Hours X	37,132.45	0.6	22,279.47	17,494.20			
Lab Contact Hours Y	8,650.00	0.5	4,325.00	1,662.10			
Lab Contact Hours Z	14,972.70	0.3	4,491.81	5,617.40			
Total Class Lab			39,294.68	30,906.20	78.7	87.3	*93.0*
RESEARCH							
Research Disciplines A	31.20	45.0	1,404.00	645.13			
Research Disciplines B	92.50	30.0	2,775.00	789.10			
Research Disciplines C	18.20	20.0	364.00	257.70			
Research Disciplines D	8.80	10.0	88.00	5.53			
Research Disciplines E	426.00	1.0	426.00	40.13			
Total Research			5,057.00	1,737.60	34.4	84.4	*29.6*
OFFICE - ACADEMIC							
Total FTE Faculty	576.70	13.0	7,497.10	8,635.50	100.2	124.3	
Faculty Supplement	86.51	13.0	1,124.57				
Total FTE Grads	0.00	4.0	0.00	50.90	n/a	59.4	*n/a*
Total FTE Non-Acd Staff	216.78	13.0	2,818.14	1,572.90	55.8	97.4	
Office Service	11,439.81	0.3	3,431.94	2,446.70	71.3	87.0	
Total Academic Office			14,871.75	12,706.00	85.4	96.8	*75.3*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	414.35	13.0	5,386.55	5,666.10	105.2	112.8	
Office Service	5,386.55	0.3	1,615.97	2,863.90	177.2	209.4	
Total Admin. Office			7,002.52	8,530.00	121.8	135.1	*160.6*
Total Office			21,874.26	21,236.00	97.1	105.4	*97.0*
LIBRARY							
10% of Total Eq. Volumes	70,143.56	0.004	280.57				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	31,292.07	0.005	156.46				
Total Stack	701,435.64		4,337.03	2,832.90	65.3	67.6	*166.4*
FTE UG - Excl. Prof.	14,078.20	0.5	7,039.10				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	0.00	0.7	0.00				
Total Study	14,078.20		7,039.10	2,860.30	40.6	67.5	*10.7*
Library Support	11,376.13	0.25	2,844.03	2,140.90	75.3	78.2	*78.9*
Total Library			14,220.17	7,834.10	55.1	69.7	*65.7*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	14,078.20	0.9	12,670.38				
Total P.E./Athletics			12,670.38	6,270.00	49.5	75.4	*50.8*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	125,319.00	0.015	1,879.79	2,193.60	116.7	97.3	*92.3*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	14,078.20	2.0	28,156.40	17,690.60	62.8	77.5	*66.7*
TOTAL FORMULA AREAS			140,046.51	102,003.20	72.8	86.0	*78.8*

Table 18
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

TORONTO (ST. GEORGE)

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	34,477.68	1.2	41,373.22	44,780.00	108.2	90.0	*113.1*
CLASS LABS							
Lab Contact Hours W	6,379.25	0.8	5,103.40	6,030.26			
Lab Contact Hours X	49,606.09	0.6	29,763.65	36,629.83			
Lab Contact Hours Y	6,110.00	0.5	3,055.00	1,438.36			
Lab Contact Hours Z	6,627.00	0.3	1,988.10	1,538.14			
Total Class Lab			39,910.15	45,636.59	114.3	87.3	*133.2*
RESEARCH							
Research Disciplines A	1,285.96	45.0	57,868.20	45,750.07			
Research Disciplines B	704.82	30.0	21,144.60	24,335.92			
Research Disciplines C	287.27	20.0	5,745.40	4,614.07			
Research Disciplines D	444.84	10.0	4,448.40	2,817.84			
Research Disciplines E	3,433.04	1.0	3,433.04	1,324.63			
Total Research			92,639.64	78,842.53	85.1	84.4	*80.5*
OFFICE - ACADEMIC							
Total FTE Faculty	1,957.74	13.0	25,450.62	46,119.43	157.6	124.3	
Faculty Supplement	293.66	13.0	3,817.59				
Total FTE Grads	8,139.40	4.0	32,557.60	14,669.82	45.1	59.4	*47.4*
Total FTE Non-Acd Staff	1,621.57	13.0	21,080.41	22,371.61	106.1	97.4	
Office Service	82,906.22	0.3	24,871.87	24,811.94	99.8	87.0	
Total Academic Office			107,778.09	107,972.80	100.2	96.8	*97.5*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	1,008.86	13.0	13,115.18	15,202.78	115.9	112.8	
Office Service	13,115.18	0.3	3,934.55	8,455.87	214.9	209.4	
Total Admin. Office			17,049.73	23,658.65	138.8	135.1	*128.7*
Total Office			124,827.82	131,631.45	105.5	105.4	*102.6*
LIBRARY							
10% of Total Eq. Volumes	1,220,564.92	0.004	4,882.26				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	10,385,084.31	0.005	51,925.42				
Total Stack	12,205,649.23		60,707.68	41,324.36	68.1	67.6	*84.4*
FTE UG - Excl. Prof.	23,880.57	0.5	11,940.29				
FTE UG - Professional	2,457.73	1.0	2,457.73				
FTE Grads	8,139.40	0.7	5,697.58				
Total Study	34,477.70		20,095.60	19,677.07	97.9	67.5	*104.9*
Library Support	80,803.28	0.25	20,200.82	17,988.08	89.0	78.2	*131.2*
Total Library			101,004.10	78,989.51	78.2	69.7	*98.6*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	34,477.68	0.9	31,029.91				
Total P.E./Athletics			31,029.91	27,411.37	88.3	75.4	*97.2*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	592,011.69	0.015	8,880.18	7,912.45	89.1	97.3	*82.7*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	34,477.68	2.0	68,955.36	57,208.71	83.0	77.5	*86.2*
TOTAL FORMULA AREAS			508,620.38	472,412.61	92.9	86.0	*97.8*

The 1995-96 % I/G figures include OISE.

Table 19
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

TORONTO (MISSISSAUGA)

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	4,569.80	1.2	5,483.76	4,964.18	90.5	90.0	*101.6*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	4,669.00	0.6	2,801.40	4,697.95			
Lab Contact Hours Y	1,592.00	0.5	796.00	889.75			
Lab Contact Hours Z	732.50	0.3	219.75	327.25			
Total Class Lab			3,817.15	5,914.95	155.0	87.3	*143.2*
RESEARCH							
Research Disciplines A	63.92	45.0	2,876.40	4,024.42			
Research Disciplines B	21.50	30.0	645.00	1,001.22			
Research Disciplines C	22.40	20.0	448.00	591.77			
Research Disciplines D	5.00	10.0	50.00	0.00			
Research Disciplines E	113.47	1.0	113.47	41.74			
Total Research			4,132.87	5,659.15	136.9	84.4	*123.3*
OFFICE - ACADEMIC							
Total FTE Faculty	182.79	13.0	2,376.27	3,276.14	119.9	124.3	
Faculty Supplement	27.42	13.0	356.44				
Total FTE Grads	86.00	4.0	344.00	1,077.51	313.2	59.4	*418.6*
Total FTE Non-Acd Staff	45.78	13.0	595.14	598.74	100.6	97.4	
Office Service	3,671.85	0.3	1,101.56	399.99	36.3	87.0	
Total Academic Office			4,773.41	5,352.38	112.1	96.8	*112.3*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	85.48	13.0	1,111.24	1,201.76	108.1	112.8	
Office Service	1,111.24	0.3	333.37	689.39	206.8	209.4	
Total Admin. Office			1,444.61	1,891.15	130.9	135.1	*122.6*
Total Office			6,218.02	7,243.53	116.5	105.4	*114.8*
LIBRARY							
10% of Total Eq. Volumes	48,686.40	0.004	194.75				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	138,177.60	0.006	829.07				
Remainder	0.00	0.005	0.00				
Total Stack	486,864.00		3,123.81	1,929.24	61.8	67.6	*79.9*
FTE UG - Excl. Prof.	4,483.80	0.5	2,241.90				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	86.00	0.7	60.20				
Total Study	4,569.80		2,302.10	1,646.14	71.5	67.5	*81.7*
Library Support	5,425.91	0.25	1,356.48	630.96	46.5	78.2	*52.5*
Total Library			6,782.39	4,206.34	62.0	69.7	*75.1*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	4,569.80		1,000.00				
Total FTE Students	4,569.80	0.9	4,112.82				
Total P.E./Athletics			5,112.82	2,395.20	46.8	75.4	*48.6*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	56,552.93	0.015	848.29	740.68	87.3	97.3	*77.8*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	4,569.80	2.0	9,139.60	6,766.18	74.0	77.5	*86.0*
TOTAL FORMULA AREAS			41,514.90	37,890.21	91.2	86.0	*96.5*

Table 20
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

TORONTO (SCARBOROUGH)

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	4,312.20	1.2	5,174.64	3,245.70	62.7	90.0	*77.4*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	6,279.00	0.6	3,767.40	4,600.94			
Lab Contact Hours Y	647.00	0.5	323.50	401.52			
Lab Contact Hours Z	148.00	0.3	44.40	244.15			
Total Class Lab			4,135.30	5,246.61	126.9	87.3	*127.3*
RESEARCH							
Research Disciplines A	48.67	45.0	2,189.93	1,840.45			
Research Disciplines B	20.39	30.0	611.70	742.20			
Research Disciplines C	21.37	20.0	427.40	203.35			
Research Disciplines D	14.50	10.0	145.00	0.00			
Research Disciplines E	107.87	1.0	107.87	791.19			
Total Research			3,481.89	3,577.19	102.7	84.4	*93.3*
OFFICE - ACADEMIC							
Total FTE Faculty	184.13	13.0	2,393.65	3,017.66	109.6	124.3	
Faculty Supplement	27.62	13.0	359.05				
Total FTE Grads	58.00	4.0	232.00	607.44	261.8	59.4	*505.8*
Total FTE Non-Acd Staff	27.15	13.0	352.95	335.64	95.1	97.4	
Office Service	3,337.65	0.3	1,001.29	269.29	26.9	87.0	
Total Academic Office			4,338.94	4,230.03	97.5	96.8	*85.9*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	85.26	13.0	1,108.38	1,147.08	103.5	112.8	
Office Service	1,108.38	0.3	332.51	695.79	209.3	209.4	
Total Admin. Office			1,440.89	1,842.87	127.9	135.1	*162.2*
Total Office			5,779.84	6,072.90	105.1	105.4	*102.3*
LIBRARY							
10% of Total Eq. Volumes	37,886.04	0.004	151.54				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	40,974.38	0.006	245.85				
Remainder	0.00	0.005	0.00				
Total Stack	378,860.43		2,497.39	1,306.66	52.3	67.6	*66.1*
FTE UG - Excl. Prof.	4,254.20	0.5	2,127.10				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	58.00	0.7	40.60				
Total Study	4,312.20		2,167.70	1,305.91	60.2	67.5	*63.4*
Library Support	4,655.09	0.25	1,166.27	669.92	57.4	78.2	*67.2*
Total Library			5,831.36	3,282.49	56.3	69.7	*65.2*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	4,312.20		1,000.00				
Total FTE Students	4,312.20	0.9	3,880.98				
Total P.E./Athletics			4,880.98	3,968.03	81.3	75.4	*71.6*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	43,498.36	0.015	652.48	1,093.35	167.6	97.3	*139.9*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	4,312.20	2.0	8,624.40	5,317.10	61.7	77.5	*67.5*
TOTAL FORMULA AREAS			38,560.89	31,803.37	82.5	86.0	*85.2*

Table 21
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

TRENT

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	3,994.00	1.2	4,792.80	4,679.00	97.6	90.0	*78.7*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	4,702.00	0.6	2,821.20	1,885.22			
Lab Contact Hours Y	6,978.00	0.5	3,489.00	1,164.69			
Lab Contact Hours Z	89.00	0.3	26.70	166.48			
Total Class Lab			6,336.90	3,216.38	50.8	87.3	*135.6*
RESEARCH							
Research Disciplines A	68.60	45.0	3,087.00	1,368.42			
Research Disciplines B	14.60	30.0	438.00	199.08			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	37.10	10.0	371.00	510.95			
Research Disciplines E	197.25	1.0	197.25	509.28			
Total Research			4,093.25	2,587.73	63.2	84.4	*82.3*
OFFICE - ACADEMIC							
Total FTE Faculty	202.80	13.0	2,636.40	3,638.00	120.0	124.3	
Faculty Supplement	30.42	13.0	395.46				
Total FTE Grads	91.60	4.0	366.40	312.00	85.2	59.4	*56.0*
Total FTE Non-Acd Staff	34.30	13.0	445.90	936.00	209.9	97.4	
Office Service	3,844.16	0.3	1,153.25	410.00	35.6	87.0	
Total Academic Office			4,997.41	5,296.00	106.0	96.8	*97.2*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	191.70	13.0	2,492.10	2,519.00	101.1	112.8	
Office Service	2,492.10	0.3	747.63	1,526.00	204.1	209.4	
Total Admin. Office			3,239.73	4,045.00	124.9	135.1	*126.3*
Total Office			8,237.14	9,341.00	113.4	105.4	*108.0*
LIBRARY							
10% of Total Eq. Volumes	116,109.94	0.004	464.44				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	444,989.47	0.005	2,224.95				
Total Stack	1,161,099.41		6,589.39	4,210.00	63.9	67.6	*87.3*
FTE UG - Excl. Prof.	3,902.40	0.5	1,951.20				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	91.60	0.7	64.12				
Total Study	3,994.00		2,015.32	353.00	17.5	67.5	*16.7*
Library Support	8,604.71	0.25	2,151.18	2,621.00	121.8	78.2	*148.2*
Total Library			10,755.88	7,184.00	66.8	69.7	*81.5*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	3,994.00		2,000.00				
4,000-8,000 Enrol.	0.00						
Total FTE Students	3,994.00	0.9	3,594.60				
Total P.E./Athletics			5,594.60	3,309.00	59.1	75.4	*66.9*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	59,200.00	0.015	888.00	609.00	68.6	97.3	*84.4*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	3,994.00	2.0	7,988.00	7,507.00	94.0	77.5	*87.4*
TOTAL FORMULA AREAS			48,686.57	38,433.11	78.9	86.0	*89.1*

Table 22
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

WATERLOO

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	14,988.90	1.2	17,986.68	17,283.50	96.1	90.0	*97.3*
CLASS LABS							
Lab Contact Hours W	6,235.00	0.8	4,988.00	4,385.60			
Lab Contact Hours X	27,440.00	0.6	16,464.00	14,973.90			
Lab Contact Hours Y	2,670.00	0.5	1,335.00	2,965.80			
Lab Contact Hours Z	8,360.50	0.3	2,508.15	2,411.40			
Total Class Lab			25,295.15	24,736.70	97.8	87.3	*101.6*
RESEARCH							
Research Disciplines A	407.30	45.0	18,328.50	18,307.20			
Research Disciplines B	281.50	30.0	8,445.00	9,146.10			
Research Disciplines C	321.45	20.0	6,429.00	4,703.40			
Research Disciplines D	245.50	10.0	2,455.00	1,741.40			
Research Disciplines E	524.25	1.0	524.25	598.60			
Total Research			36,181.75	34,496.70	95.3	84.4	*97.7*
OFFICE - ACADEMIC							
Total FTE Faculty	869.00	13.0	11,297.00	16,743.50	128.9	124.3	
Faculty Supplement	130.35	13.0	1,694.55				
Total FTE Grads	1,643.70	4.0	6,574.80	8,567.60	130.3	59.4	*127.5*
Total FTE Non-Acd Staff	508.20	13.0	6,606.60	4,875.90	73.8	97.4	
Office Service	26,172.95	0.3	7,851.89	7,004.70	89.2	87.0	
Total Academic Office			34,024.84	37,191.70	109.3	96.8	*107.7*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	479.40	13.0	6,232.20	9,708.10	155.8	112.8	
Office Service	6,232.20	0.3	1,869.66	4,397.50	235.2	209.4	
Total Admin. Office			8,101.86	14,105.60	174.1	135.1	*132.6*
Total Office			42,126.70	51,297.30	121.8	105.4	*113.3*
LIBRARY							
10% of Total Eq. Volumes	246,036.73	0.004	984.15				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	1,614,330.57	0.005	8,071.65				
Total Stack	2,460,367.30		12,955.80	7,994.80	61.7	67.6	*68.1*
FTE UG - Excl. Prof.	13,105.20	0.5	6,552.60				
FTE UG - Professional	240.00	1.0	240.00				
FTE Grads	1,643.70	0.7	1,150.59				
Total Study	14,988.90		7,943.19	5,808.20	73.1	67.5	*72.7*
Library Support	20,898.99	0.25	5,224.75	3,884.20	74.3	78.2	*71.2*
Total Library			26,123.74	17,687.20	67.7	69.7	*70.2*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	14,988.90	0.9	13,490.01				
Total P.E./Athletics			13,490.01	11,705.50	86.8	75.4	*87.5*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	295,550.10	0.015	4,433.25	5,576.90	125.8	97.3	*126.7*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	14,988.90	2.0	29,977.80	33,278.60	111.0	77.5	*112.6*
TOTAL FORMULA AREAS			195,615.07	196,062.40	100.2	86.0	*100.5*

Table 23
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

WESTERN

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	22,958.50	1.2	27,550.20	28,850.00	104.7	90.0	*96.6*
CLASS LABS							
Lab Contact Hours W	7,064.00	0.8	5,651.20	2,567.00			
Lab Contact Hours X	38,872.00	0.6	23,323.20	19,235.10			
Lab Contact Hours Y	7,101.00	0.5	3,550.50	7,225.60			
Lab Contact Hours Z	14,783.00	0.3	4,434.90	3,909.30			
Total Class Lab			36,959.80	32,937.00	89.1	87.3	*96.7*
RESEARCH							
Research Disciplines A	689.40	45.0	31,023.00	19,426.43			
Research Disciplines B	333.35	30.0	10,000.50	8,037.73			
Research Disciplines C	162.45	20.0	3,249.00	2,011.11			
Research Disciplines D	183.85	10.0	1,838.50	1,213.29			
Research Disciplines E	1,508.00	1.0	1,508.00	523.86			
Total Research			47,619.00	31,212.42	65.5	84.4	*82.7*
OFFICE - ACADEMIC							
Total FTE Faculty	1,297.90	13.0	16,872.70	22,626.00	116.6	124.3	
Faculty Supplement	194.69	13.0	2,530.91				
Total FTE Grads	2,890.10	4.0	11,560.40	6,263.00	54.2	59.4	*56.6*
Total FTE Non-Acd Staff	1,119.20	13.0	14,549.60	5,372.00	36.9	97.4	
Office Service	45,513.61	0.3	13,654.08	10,266.00	75.2	87.0	
Total Academic Office			59,167.69	44,527.00	75.3	96.8	*81.1*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	1,237.60	13.0	16,088.80	14,039.00	87.3	112.8	
Office Service	16,088.80	0.3	4,826.64	8,916.00	184.7	209.4	
Total Admin. Office			20,915.44	22,955.00	109.8	135.1	*111.8*
Total Office			80,083.13	67,482.00	84.3	105.4	*89.5*
LIBRARY							
10% of Total Eq. Volumes	382,423.78	0.004	1,529.70				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	2,841,814.03	0.005	14,209.07				
Total Stack	3,824,237.81		19,638.77	16,018.00	81.6	67.6	*82.0*
FTE UG - Excl. Prof.	18,201.40	0.5	9,100.70				
FTE UG - Professional	1,867.00	1.0	1,867.00				
FTE Grads	2,890.10	0.7	2,023.07				
Total Study	22,958.50		12,990.77	9,742.00	75.0	67.5	*77.1*
Library Support	32,629.54	0.25	8,157.38	6,420.00	78.7	78.2	*82.3*
Total Library			40,786.92	32,180.00	78.9	69.7	*80.5*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	22,958.50	0.9	20,662.65				
Total P.E./Athletics			20,662.65	15,434.00	74.7	75.4	*74.8*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	358,928.00	0.015	5,383.92	5,944.00	110.4	97.3	*111.1*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	22,958.50	2.0	45,917.00	33,965.00	74.0	77.5	*75.2*
TOTAL FORMULA AREAS			304,962.62	248,004.42	81.3	86.0	*85.8*

Table 24
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

WILFRID LAURIER

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	7,038.00	1.2	8,445.60	6,136.00	72.7	90.0	*90.7*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	4,916.00	0.6	2,949.60	2,822.00			
Lab Contact Hours Y	2,550.00	0.5	1,275.00	1,359.00			
Lab Contact Hours Z	1,595.00	0.3	478.50	554.00			
Total Class Lab			4,703.10	4,735.00	100.7	87.3	*116.3*
RESEARCH							
Research Disciplines A	19.00	45.0	855.00	866.00			
Research Disciplines B	36.00	30.0	1,080.00	686.00			
Research Disciplines C	20.50	20.0	410.00	61.00			
Research Disciplines D	37.00	10.0	370.00	92.00			
Research Disciplines E	487.50	1.0	487.50	123.00			
Total Research			3,202.50	1,828.00	57.1	84.4	*68.5*
OFFICE - ACADEMIC							
Total FTE Faculty	291.00	13.0	3,783.00	4,890.00	112.4	124.3	
Faculty Supplement	43.65	13.0	567.45				
Total FTE Grads	618.00	4.0	2,472.00	678.00	27.4	59.4	*26.3*
Total FTE Non-Acd Staff	101.00	13.0	1,313.00	1,258.00	95.8	97.4	
Office Service	8,135.45	0.3	2,440.64	1,227.00	50.3	87.0	
Total Academic Office			10,576.09	8,053.00	76.1	96.8	*74.5*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	327.00	13.0	4,251.00	3,800.00	89.4	112.8	
Office Service	4,251.00	0.3	1,275.30	4,702.00	368.7	209.4	
Total Admin. Office			5,526.30	8,502.00	153.8	135.1	*102.6*
Total Office			16,102.39	16,555.00	102.8	105.4	*85.8*
LIBRARY							
10% of Total Eq. Volumes	100,958.04	0.004	403.83				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	308,622.33	0.005	1,543.11				
Total Stack	1,009,580.37		5,846.94	3,888.00	66.5	67.6	*63.1*
FTE UG - Excl. Prof.	6,420.00	0.5	3,210.00				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	618.00	0.7	432.60				
Total Study	7,038.00		3,642.60	2,277.00	62.5	67.5	*77.5*
Library Support	9,489.54	0.25	2,372.39	1,731.00	73.0	78.2	*57.4*
Total Library			11,861.93	7,896.00	66.6	69.7	*66.1*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	7,038.00		1,000.00				
Total FTE Students	7,038.00	0.9	6,334.20				
Total P.E./Athletics			7,334.20	6,421.00	87.5	75.4	*98.6*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	86,190.00	0.015	1,292.85	1,115.00	86.2	97.3	*107.9*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	7,038.00	2.0	14,076.00	12,333.00	87.6	77.5	*100.7*
TOTAL FORMULA AREAS			67,018.56	57,019.00	85.1	86.0	*88.5*

Table 25
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

WINDSOR

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	9,846.30	1.2	11,815.56	10,137.00	85.8	90.0	*73.5*
CLASS LABS							
Lab Contact Hours W	931.50	0.8	745.20	1,732.00			
Lab Contact Hours X	10,703.00	0.6	6,421.80	8,921.73			
Lab Contact Hours Y	9,331.50	0.5	4,665.75	1,820.00			
Lab Contact Hours Z	4,654.00	0.3	1,396.20	1,530.64			
Total Class Lab			13,228.95	14,004.37	105.9	87.3	*88.1*
RESEARCH							
Research Disciplines A	92.15	45.0	4,146.75	6,114.00			
Research Disciplines B	143.25	30.0	4,297.50	3,836.00			
Research Disciplines C	70.65	20.0	1,413.00	590.00			
Research Disciplines D	73.06	10.0	730.60	391.00			
Research Disciplines E	378.59	1.0	378.59	82.00			
Total Research			10,966.44	11,013.00	100.4	84.4	*88.1*
OFFICE - ACADEMIC							
Total FTE Faculty	442.60	13.0	5,753.80	9,458.00	142.9	124.3	
Faculty Supplement	66.39	13.0	863.07				
Total FTE Grads	575.30	4.0	2,301.20	2,707.00	117.6	59.4	*60.9*
Total FTE Non-Acd Staff	164.02	13.0	2,132.26	1,904.00	89.3	97.4	
Office Service	11,050.33	0.3	3,315.10	3,061.00	92.3	87.0	
Total Academic Office			14,365.43	17,130.00	119.2	96.8	*99.1*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	231.70	13.0	3,012.10	5,369.00	178.2	112.8	
Office Service	3,012.10	0.3	903.63	2,627.00	290.7	209.4	
Total Admin. Office			3,915.73	7,996.00	204.2	135.1	*160.5*
Total Office			18,281.16	25,126.00	137.4	105.4	*113.0*
LIBRARY							
10% of Total Eq. Volumes	201,754.42	0.004	807.02				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	1,215,789.81	0.005	6,078.95				
Total Stack	2,017,544.23		10,785.97	6,538.00	60.6	67.6	*52.7*
FTE UG - Excl. Prof.	8,230.80	0.5	4,115.40				
FTE UG - Professional	1,040.20	1.0	1,040.20				
FTE Grads	575.30	0.7	402.71				
Total Study	9,846.30		5,558.31	5,623.00	101.2	67.5	*80.3*
Library Support	16,344.28	0.25	4,086.07	3,179.00	77.8	78.2	*69.7*
Total Library			20,430.35	15,340.00	75.1	69.7	*63.8*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	9,846.30	0.9	8,861.67				
Total P.E./Athletics			8,861.67	10,307.00	116.3	75.4	*103.1*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	139,801.00	0.015	2,097.02	1,909.00	91.0	97.3	*90.7*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	9,846.30	2.0	19,692.60	17,784.00	90.3	77.5	*79.7*
TOTAL FORMULA AREAS			105,373.74	105,620.37	100.2	86.0	*86.0*

Table 26
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

YORK (MAIN)

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	26,996.79	1.2	32,396.15	22,850.06	70.5	90.0	*67.6*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	25,927.00	0.6	15,556.20	12,364.46			
Lab Contact Hours Y	9,028.00	0.5	4,514.00	1,552.69			
Lab Contact Hours Z	4,076.50	0.3	1,222.95	2,747.89			
Total Class Lab			21,293.15	16,665.04	78.3	87.3	*62.7*
RESEARCH							
Research Disciplines A	209.08	45.0	9,408.60	8,950.01			
Research Disciplines B	142.58	30.0	4,277.40	2,059.79			
Research Disciplines C	268.14	20.0	5,362.80	968.90			
Research Disciplines D	290.89	10.0	2,908.90	1,247.95			
Research Disciplines E	1,768.42	1.0	1,768.42	372.36			
Total Research			23,726.12	13,599.01	57.3	84.4	*50.2*
OFFICE - ACADEMIC							
Total FTE Faculty	1,329.09	13.0	17,278.17	18,946.68	95.4	124.3	
Faculty Supplement	199.36	13.0	2,591.73				
Total FTE Grads	2,610.03	4.0	10,440.12	5,246.86	50.3	59.4	*46.5*
Total FTE Non-Acd Staff	856.50	13.0	11,134.50	12,694.82	114.0	97.4	
Office Service	41,444.52	0.3	12,433.35	13,044.78	104.9	87.0	
Total Academic Office			53,877.87	49,933.14	92.7	96.8	*80.2*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	555.50	13.0	7,221.50	6,973.14	96.6	112.8	
Office Service	7,221.50	0.3	2,166.45	3,950.45	182.3	209.4	
Total Admin. Office			9,387.95	10,923.59	116.4	135.1	*116.5*
Total Office			63,265.82	60,856.73	96.2	105.4	*91.4*
LIBRARY							
10% of Total Eq. Volumes	319,892.97	0.004	1,279.57				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	300,000.00	0.006	1,800.00				
Remainder	2,279,036.74	0.005	11,395.18				
Total Stack	3,198,929.71		16,574.76	9,702.10	58.5	67.6	*60.3*
FTE UG - Excl. Prof.	22,633.92	0.5	11,316.96				
FTE UG - Professional	1,752.84	1.0	1,752.84				
FTE Grads	2,610.03	0.7	1,827.02				
Total Study	26,996.79		14,896.82	6,444.20	43.3	67.5	*46.0*
Library Support	31,471.58	0.25	7,867.89	5,667.69	72.0	78.2	*91.6*
Total Library			39,339.47	21,813.99	55.5	69.7	*60.9*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	26,996.79	0.9	24,297.11				
Total P.E./Athletics			24,297.11	9,675.16	39.8	75.4	*53.3*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	267,405.00	0.015	4,011.08	3,585.60	89.4	97.3	*66.3*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	26,996.79	2.0	53,993.58	31,554.26	58.4	77.5	*53.6*
TOTAL FORMULA AREAS			262,322.47	180,599.85	68.8	86.0	*66.5*

Table 27
Institutional Space Requirements As Measured By COU Space Standards, 1998-99

YORK (GLENDON)

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*1995-96 % I / G*
CLASSROOMS							
Total FTE Students	1,350.78	1.2	1,620.94	2,215.23	136.7	90.0	*94.4*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	520.00	0.6	312.00	199.00			
Lab Contact Hours Y	0.00	0.5	0.00	0.00			
Lab Contact Hours Z	82.00	0.3	24.60	246.36			
Total Class Lab			336.60	445.36	132.3	87.3	*139.0*
RESEARCH							
Research Disciplines A	4.38	45.0	197.10	49.13			
Research Disciplines B	9.45	30.0	283.50	137.36			
Research Disciplines C	0.00	20.0	0.00	0.00			
Research Disciplines D	3.55	10.0	35.50	27.25			
Research Disciplines E	103.53	1.0	103.53	0.00			
Total Research			619.63	213.74	34.5	84.4	*20.4*
OFFICE - ACADEMIC							
Total FTE Faculty	109.26	13.0	1,420.38	2,105.35	128.9	124.3	
Faculty Supplement	16.39	13.0	213.06				
Total FTE Grads	23.30	4.0	93.20	32.10	34.4	59.4	*n/a*
Total FTE Non-Acd Staff	47.00	13.0	611.00	957.95	156.8	97.4	
Office Service	2,337.64	0.3	701.29	666.52	95.0	87.0	
Total Academic Office			3,038.93	3,761.92	123.8	96.8	*80.1*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	7.00	13.0	91.00	266.15	292.5	112.8	
Office Service	91.00	0.3	27.30	133.50	489.0	209.4	
Total Admin. Office			118.30	399.65	337.8	135.1	*839.8*
Total Office			3,157.23	4,161.57	131.8	105.4	*140.5*
LIBRARY							
10% of Total Eq. Volumes	39,809.40	0.004	159.24				
Next 300,000	300,000.00	0.007	2,100.00				
Next 300,000	58,284.63	0.006	349.71				
Remainder	0.00	0.005	0.00				
Total Stack	398,094.03		2,608.95	983.06	37.7	67.6	*38.5*
FTE UG - Excl. Prof.	1,327.48	0.5	663.74				
FTE UG - Professional	0.00	1.0	0.00				
FTE Grads	23.30	0.7	16.31				
Total Study	1,350.78		680.05	520.43	76.5	67.5	*71.6*
Library Support	3,289.00	0.25	822.25	301.47	36.7	78.2	*35.7*
Total Library			4,111.24	1,804.96	43.9	69.7	*44.8*
PHYSICAL EDUCATION/ATHLETICS							
Under 4,000 FTE Enrol.	1,350.78		2,000.00				
4,000-8,000 Enrol.	0.00						
Total FTE Students	1,350.78	0.9	1,215.70				
Total P.E./Athletics			3,215.70	2,907.14	90.4	75.4	*82.9*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	23,734.38	0.015	356.02	342.86	96.3	97.3	*126.3*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	1,350.78	2.0	2,701.56	3,390.08	125.5	77.5	*107.1*
TOTAL FORMULA AREAS			16,118.92	15,480.94	96.0	86.0	*90.3*

Section 4

SUMMARY TABLES

Table 28

Classroom Facilities (1): Generated Space and Inventory, 1998-99

	FTE Students	Generated Space	Inventory NASM	Inventory/ FTE Student	% I/G	*1995-96 % I/G*
Brock	7,842.9	9,412	6,025	0.8	64.0	*64.4*
Carleton	13,169.6	15,804	12,232	0.9	77.4	*68.6*
Guelph	12,562.8	15,075	11,697	0.9	77.6	*85.2*
Lakehead	5,710.5	6,853	6,188	1.1	90.3	*83.2*
Laurentian	4,567.6	5,481	6,238	1.4	113.8	*84.6*
Laurentian (Algo)	380.0	456	834	2.2	183.0	*106.8*
Laurentian (Hear)	105.6	127	666	6.3	525.2	*254.8*
McMaster	14,459.4	17,351	14,440	1.0	83.2	*83.8*
Nipissing	2,059.7	2,472	1,989	1.0	80.5	*72.5*
OCAD	1,926.4	2,312	1,861	1.0	80.5	*72.3*
Ottawa	19,017.0	22,820	20,049	1.1	87.9	*89.6*
Queen's	14,572.9	17,488	18,698	1.3	106.9	*106.5*
Ryerson	14,078.2	16,894	14,135	1.0	83.7	*87.8*
Toronto (St. Grge)	34,477.7	41,373	44,780	1.3	108.2	*113.1*
Toronto (Miss)	4,569.8	5,484	4,964	1.1	90.5	*101.6*
Toronto (Scar)	4,312.2	5,175	3,246	0.8	62.7	*77.4*
Trent	3,994.0	4,793	4,679	1.2	97.6	*78.7*
Waterloo	14,988.9	17,987	17,284	1.2	96.1	*97.3*
Western	22,958.5	27,550	28,850	1.3	104.7	*96.6*
Wilfrid Laurier	7,038.0	8,446	6,136	0.9	72.7	*90.7*
Windsor	9,846.3	11,816	10,137	1.0	85.8	*73.5*
York (Main)	26,996.8	32,396	22,850	0.8	70.5	*67.6*
York (Glen)	1,350.8	1,621	2,215	1.6	136.7	*94.4*
Total	240,985.7	289,183	260,194	1.1	90.0	*88.5*

Input Measure: Total FTE Students (as defined in Appendix D).

Space Factor: 1.2 NASM

System Average: 1.08 NASM per FTE Student.
(Actual Classroom inventory divided by Total FTE Students.)

Table 29

Class Lab Space (2): Generated Space and Inventory, 1998-99

	Class Lab Hours	Generated Space	Inventory NASM	% I/G	*1995-96 % I/G*
Brock	17,422.5	8,660	5,718	66.0	*54.1*
Carleton	28,162.5	17,559	17,664	100.6	*108.0*
Guelph	63,795.3	37,784	22,673	60.0	*65.0*
Lakehead	23,463.5	13,270	11,884	89.6	*98.4*
Laurentian	8,355.5	4,956	6,232	125.7	*112.6*
Laurentian (Algo)	967.0	341	611	179.5	*171.3*
Laurentian (Hear)	1,197.0	461	521	113.1	*100.0*
McMaster	40,966.0	23,006	19,833	86.2	*87.4*
Nipissing	17,976.0	8,972	2,457	27.4	*25.7*
OCAD	23,679.0	14,207	5,740	40.4	*44.6*
Ottawa	40,676.4	21,873	19,696	90.0	*95.8*
Queen's	41,165.3	24,309	26,068	107.2	*100.5*
Ryerson	71,003.2	39,295	30,906	78.7	*93.0*
Toronto (St. Grge)	68,722.3	39,910	45,637	114.3	*133.2*
Toronto (Miss)	6,993.5	3,817	5,915	155.0	*143.2*
Toronto (Scar)	7,074.0	4,135	5,247	126.9	*127.3*
Trent	11,769.0	6,337	3,216	50.8	*135.6*
Waterloo	44,705.5	25,295	24,737	97.8	*101.6*
Western	67,820.0	36,960	32,937	89.1	*96.7*
Wilfrid Laurier	9,061.0	4,703	4,735	100.7	*116.3*
Windsor	25,620.0	13,229	14,004	105.9	*88.1*
York (Main)	39,031.5	21,293	16,665	78.3	*62.7*
York (Glen)	602.0	337	445	132.3	*139.0*
Total	660,227.9	370,708	323,541	87.3	*91.3*

Note: The Inventory NASM figures do not necessarily agree with the Lab-Undergraduate figures on Table 2, at some institutions. Only Class Labs that are associated with Groups W to Z are included in this table.

Input Measure: Total Laboratory Weekly Student Contact Hours (as defined in Appendix D) for programs in Groups W, X, Y, and Z (as defined in Appendix E).

System Average, Space Factor:	System Average	Space Factor
Group W:	0.65	0.80
Group X:	0.53	0.60
Group Y:	0.41	0.50
Group Z:	0.31	0.30

Actual Class Lab inventory divided by Class Lab Hours (weighted average as defined in Input Measure)

Table 30

Lab - Research Facilities (3): Generated Space and Inventory, 1998-99

	Research Staff	Generated Space	Inventory NASM	Inventory/ Research Staff	% I/G	*1995-96 % I/G*
Brock	542.6	5,645	4,691	8.6	83.1	*90.8*
Carleton	1,608.0	17,515	10,756	6.7	61.4	*56.1*
Guelph	1,453.5	39,445	44,044	30.3	111.7	*117.0*
Lakehead	436.3	5,875	4,452	10.2	75.8	*64.5*
Laurentian	533.0	7,215	4,908	9.2	68.0	*76.2*
Laurentian (Algo)	51.8	377		not applicable		*n/a*
Laurentian (Hear)	20.0	160		not applicable		*n/a*
McMaster	1,828.8	35,119	35,328	19.3	100.6	*93.7*
Nipissing	118.6	610	140	1.2	22.9	*n/a*
OCAD	56.0	380		not applicable		*n/a*
Ottawa	2,472.7	31,912	24,299	9.8	76.1	*80.3*
Queen's	2,122.8	33,915	32,382	15.3	95.5	*88.4*
Ryerson	576.7	5,057	1,738	3.0	34.4	*29.6*
Toronto (St. Grge)	6,155.9	92,640	78,843	12.8	85.1	*80.5*
Toronto (Miss)	226.3	4,133	5,659	25.0	136.9	*123.3*
Toronto (Scar)	212.8	3,482	3,577	16.8	102.7	*93.3*
Trent	317.6	4,093	2,588	8.1	63.2	*82.3*
Waterloo	1,780.0	36,182	34,497	19.4	95.3	*97.7*
Western	2,877.1	47,619	31,212	10.8	65.5	*82.7*
Wilfrid Laurier	600.0	3,203	1,828	3.0	57.1	*68.5*
Windsor	757.7	10,966	11,013	14.5	100.4	*88.1*
York (Main)	2,679.1	23,726	13,599	5.1	57.3	*50.2*
York (Glen)	120.9	620	214	1.8	34.5	*20.4*
Total	27,548.0	409,887	345,767	12.6	84.4	*84.5*

Note: The Inventory NASM figures do not necessarily agree with the Lab-Grad & Faculty figures on Table 2, at some institutions. Only Research Labs that are associated with Groups A to E are included in this table.

Input Measure: Research Staff is calculated by summing the total of FTE Faculty plus one-half Graduate Students plus one-half Other Research Appointments in Research Disciplines as defined in Appendix C).

System Average, Space Factor

	System Average	Space Factor
Group A:	39.9	45
Group B:	27.7	30
Group C:	12.5	20
Group D:	6.3	10
Group E:	0.6	1

Actual Research space divided by Research Staff (weighted average as defined in Input Measure).

Table 31

Academic Departmental Office Space and Related Space (4):
Generated Space and Inventory, 1998-99

	FTE Faculty	Generated Space	Inventory NASM	% I/G	*1995-96 % I/G*
Brock	392.0	10,829	7,380	68.2	*68.5*
Carleton	614.0	26,114	27,444	105.1	*94.3*
Guelph	664.3	25,145	29,921	119.0	*109.4*
Lakehead	306.8	8,704	6,604	75.9	*75.7*
Laurentian	389.5	10,141	9,840	97.0	*95.1*
Laurentian (Algo)	51.8	1,311	429	32.8	*34.9*
Laurentian (Hear)	20.0	575	269	46.9	*49.2*
McMaster	843.4	34,207	30,636	89.6	*94.4*
Nipissing	95.0	2,395	1,257	52.5	*47.5*
OCAD	56.0	1,224	536	43.8	*33.3*
Ottawa	1,028.8	41,861	39,600	94.6	*95.5*
Queen's	822.5	33,127	40,914	123.5	*108.8*
Ryerson	576.7	14,872	12,706	85.4	*75.3*
Toronto (St. Grge)	1,957.7	107,778	107,973	100.2	*100.7*
Toronto (Miss)	182.8	4,773	5,352	112.1	*112.3*
Toronto (Scar)	184.1	4,339	4,230	97.5	*85.9*
Trent	202.8	4,997	5,296	106.0	*97.2*
Waterloo	869.0	34,025	37,192	109.3	*107.7*
Western	1,297.9	59,168	44,527	75.3	*81.1*
Wilfrid Laurier	291.0	10,576	8,053	76.1	*74.5*
Windsor	442.6	14,365	17,130	119.2	*99.1*
York (Main)	1,329.1	53,878	49,933	92.7	*80.2*
York (Glen)	109.3	3,039	3,762	123.8	*80.1*
Total	12,727.1	507,443	490,985	96.8	*92.6*

1995-96 FTE Faculty figures used for Laurentian (Hear) .

Input Measure: Total FTE Faculty (as defined in Appendix D) plus 15%, total FTE Non-Academic Staff requiring offices, and total FTE Graduate Students.

Space Factor: 13 NASM per FTE Faculty and FTE Non-Academic Staff, Faculty Supplement = 15% of FTE Faculty, 4 NASM per FTE Graduate Student, plus 30% allowance for office support space.

System Average: 38.6 NASM per FTE Faculty.
(Actual Space for Faculty, Graduate Students, and non-academic departmental staff (including service space) divided by Total FTE Faculty.)

Table 31A

Graduate Student Office Space (4.3):
Generated Space and Inventory, 1998-99

	Graduate Students	Generated Space	Inventory NASM	% I/G	*1995-96 % I/G*
Brock	285.2	1,141	614	53.8	*55.7*
Carleton	1,918.9	7,676	5,927	77.2	*71.1*
Guelph	1,518.1	6,072	5,888	97.0	*88.1*
Lakehead	252.9	1,012	813	80.4	*70.2*
Laurentian	263.7	1,055	353	33.5	*42.1*
Laurentian (Algo)		not applicable			
Laurentian (Hear)		not applicable			
McMaster	1,734.8	6,939	4,887	70.4	*69.2*
Nipissing	47.1	188	0	not applicable	
OCAD		not applicable			
Ottawa	2,787.0	11,148	4,775	42.8	*42.7*
Queen's	2,268.9	9,076	2,654	29.2	*76.8*
Ryerson	not applicable		51	not applicable	
Toronto (St. Grge)	8,139.4	32,558	14,670	45.1	*45.5*
Toronto (Miss)	86.0	344	1,078	313.2	*418.6*
Toronto (Scar)	58.0	232	607	261.8	*505.8*
Trent	91.6	366	312	85.2	*56.0*
Waterloo	1,643.7	6,575	8,568	130.3	*127.5*
Western	2,890.1	11,560	6,263	54.2	*56.6*
Wilfrid Laurier	618.0	2,472	678	27.4	*26.3*
Windsor	575.3	2,301	2,707	117.6	*80.9*
York (Main)	2,610.0	10,440	5,247	50.3	*46.5*
York (Glen)	23.3	93	32	34.4	*0.0*
Total	27,812.1	111,248	66,124	59.4	*62.1*

Input Measure: Total FTE Graduate Students.

Space Factor: 4 NASM

System Average: 2.4 NASM per Graduate Student
(Actual Space for Graduate Students (including service space) divided by Total Graduate Students.)

Table 32

Administrative Office Space (10): Generated Space and Inventory, 1998-99

	FTE Non-Acad. Office Staff	Space Generated	Inventory NASM	Inventory/ Office Staff	% I/G	*1995-96 % I/G*
Brock	255.6	4,320	4,357	17.0	100.9	*87.7*
Carleton	508.7	8,597	8,954	17.6	104.1	*105.0*
Guelph	488.7	8,260	20,542	42.0	248.7	*209.2*
Lakehead	305.7	5,166	3,830	12.5	74.1	*84.1*
Laurentian	211.0	3,566	4,872	23.1	136.6	*163.9*
Laurentian (Alg)	23.0	389	453	19.7	116.6	*120.8*
Laurentian (Hea)	7.0	118	274	39.2	232.0	*162.4*
McMaster	680.4	11,499	13,511	19.9	117.5	*113.4*
Nipissing	62.0	1,048	1,212	19.5	115.7	*92.5*
OCAD	56.9	961	812	14.3	84.5	*154.3*
Ottawa	715.6	12,094	22,541	31.5	186.4	*149.0*
Queen's	826.7	13,971	13,881	16.8	99.4	*130.1*
Ryerson	414.4	7,003	8,530	20.6	121.8	*160.6*
Toronto (St. Grge)	1,008.9	17,050	23,659	23.5	138.8	*128.7*
Toronto (Miss)	85.5	1,445	1,891	22.1	130.9	*122.6*
Toronto (Scar)	85.3	1,441	1,843	21.6	127.9	*162.2*
Trent	191.7	3,240	4,045	21.1	124.9	*126.3*
Waterloo	479.4	8,102	14,106	29.4	174.1	*132.6*
Western	1,237.6	20,915	22,955	18.5	109.8	*111.8*
Wilfrid Laurier	327.0	5,526	8,502	26.0	153.8	*102.6*
Windsor	231.7	3,916	7,996	34.5	204.2	*160.5*
York (Main)	555.5	9,388	10,924	19.7	116.4	*116.5*
York (Glen)	7.0	118	400	57.1	337.8	*839.8*
Total	8,765.2	148,131	200,089	22.8	135.1	*130.0*

Laurentian (Alg) did not provide FTE Non-Academic Office Staff figures in 1998; 1995 figures used.

Input Measure: Total FTE Non-Academic Office Staff requiring offices.

Space Factor: 13 NASM for FTE Non-Academic Office Staff, plus 30% allowance for office support space. (16.9 NASM including office support space).

System Average: 23.4 NASM per Non-Academic Office Staff
(Total Actual Non-Academic Office Staff Space (including service space) divided by Non-Academic Staff.)

Table 33

Library Space (5): Generated Space and Inventory, 1998-99

	FTE Students	Generated Space	Inventory NASM	Inventory / FTE Students	% I/G	*1995-96 % I/G*
Brock	7,842.9	12,640	6,944	0.9	54.9	*57.7*
Carleton	13,169.6	22,580	14,879	1.1	65.9	*66.3*
Guelph	12,562.8	27,177	13,181	1.0	48.5	*67.3*
Lakehead	5,710.5	9,951	6,290	1.1	63.2	*60.8*
Laurentian	4,567.6	10,744	9,112	2.0	84.8	*75.8*
Laurentian (Algo)	380.0	1,359	2,242	5.9	165.0	*104.8*
Laurentian (Hear)	105.6	524	446	4.2	85.1	*69.9*
McMaster	14,459.4	27,926	24,777	1.7	88.7	*90.3*
Nipissing	2,059.7	3,358	1,779	0.9	53.0	*60.5*
OCAD	1,926.4	1,798	519	0.3	28.8	*30.7*
Ottawa	19,017.0	35,069	20,851	1.1	59.5	*61.3*
Queen's	14,572.9	32,593	26,232	1.8	80.5	*81.6*
Ryerson	14,078.2	14,220	7,834	0.6	55.1	*65.7*
Toronto (St. Grge)	34,477.7	101,004	78,990	2.3	78.2	*98.6*
Toronto (Miss)	4,569.8	6,782	4,206	0.9	62.0	*75.1*
Toronto (Scar)	4,312.2	5,831	3,282	0.8	56.3	*65.2*
Trent	3,994.0	10,756	7,184	1.8	66.8	*81.5*
Waterloo	14,988.9	26,124	17,687	1.2	67.7	*70.2*
Western	22,958.5	40,787	32,180	1.4	78.9	*80.5*
Wilfrid Laurier	7,038.0	11,862	7,896	1.1	66.6	*66.1*
Windsor	9,846.3	20,430	15,340	1.6	75.1	*63.8*
York (Main)	26,996.8	39,339	21,814	0.8	55.5	*60.9*
York (Glen)	1,350.8	4,111	1,805	1.3	43.9	*44.8*
Total	240,985.7	466,966	325,471	1.4	69.7	*75.6*

Input Measure: Total FTE Students and Total Equivalent Volumes

Space Factor: The range is between 0.5 NASM and 1.0 NASM for FTE Students, from 0.004 NASM to 0.007 NASM for Equivalent Volumes, plus 25% allowance for service space.

System Average: 1.35 NASM per FTE Student
(Total Actual Library space (stack space for total volumes, study space for FTE undergraduates, professional undergraduates & graduates, and service space for the number of volumes and students) divided by Total FTE Students.)

Table 34

Physical Education / Athletics Space (6): Generated Space and Inventory, 1998-99

	FTE Students	Generated Space	Inventory NASM	Inventory / FTE Students	% I/G	*1995-96 % I/G*
Brock	7,842.9	8,059	6,843	0.9	84.9	*84.6*
Carleton	13,169.6	11,853	9,433	0.7	79.6	*69.1*
Guelph	12,562.8	11,307	15,866	1.3	140.3	*151.3*
Lakehead	5,710.5	6,139	4,601	0.8	74.9	*69.2*
Laurentian	4,567.6	5,111	6,139	1.3	120.1	*96.1*
Laurentian (Algo)	380.0	2,342	3,282	8.6	140.1	*126.9*
Laurentian (Hear)	105.6	2,095	710	6.7	33.9	*31.0*
McMaster	14,459.4	13,013	8,344	0.6	64.1	*63.7*
Nipissing	2,059.7	3,854	688	0.3	17.9	*18.7*
OCAD	1,926.4	3,734		not applicable		
Ottawa	19,017.0	17,115	7,067	0.4	41.3	*42.1*
Queen's	14,572.9	13,116	14,440	1.0	110.1	*108.4*
Ryerson	14,078.2	12,670	6,270	0.4	49.5	*50.8*
Toronto (St. Grge)	34,477.7	31,030	27,411	0.8	88.3	*97.2*
Toronto (Miss)	4,569.8	5,113	2,395	0.5	46.8	*48.6*
Toronto (Scar)	4,312.2	4,881	3,968	0.9	81.3	*71.6*
Trent	3,994.0	5,595	3,309	0.8	59.1	*66.9*
Waterloo	14,988.9	13,490	11,706	0.8	86.8	*87.5*
Western	22,958.5	20,663	15,434	0.7	74.7	*74.8*
Wilfrid Laurier	7,038.0	7,334	6,421	0.9	87.5	*98.6*
Windsor	9,846.3	8,862	10,307	1.0	116.3	*103.1*
York (Main)	26,996.8	24,297	9,675	0.4	39.8	*53.3*
York (Glen)	1,350.8	3,216	2,907	2.2	90.4	*82.9*
Total	240,985.7	234,887	177,215	0.7	75.4	*76.3*

Input Measure: Total FTE Students (as defined in Appendix D).

Space Factor: 0.9 NASM

System Average: 0.735 NASM per FTE Student
(Total Actual Physical Education/Athletics space divided by Total FTE students).

Table 35

Maintenance Space (9): Generated Space and Inventory, 1998-99

	NASM Inventory	Generated Space	Inventory NASM	% I/G	*1995-96 % I/G*
Brock	84,199.4	1,263	1,485	117.5	*69.2*
Carleton	156,366.4	2,345	1,804	76.9	*77.2*
Guelph	291,485.2	4,372	4,992	114.2	*112.3*
Lakehead	86,628.0	1,299	1,172	90.2	*105.5*
Laurentian	85,222.6	1,278	2,096	164.0	*195.1*
Laurentian (Algo)	10,610.0	159	216	135.4	*83.1*
Laurentian (Hear)	6,399.0	96	641	667.4	*633.9*
McMaster	276,284.7	4,144	4,690	113.2	*117.9*
Nipissing	21,646.0	325	not applicable		
OCAD	10,839.0	163	91	56.2	*102.9*
Ottawa	218,996.9	3,285	905	27.5	*30.2*
Queen's	295,994.0	4,440	3,321	74.8	*76.3*
Ryerson	125,319.0	1,880	2,194	116.7	*92.3*
Toronto (St. Grge)	592,011.7	8,880	7,912	89.1	*82.7*
Toronto (Miss)	56,552.9	848	741	87.3	*77.8*
Toronto (Scar)	43,498.4	652	1,093	167.6	*139.9*
Trent	59,200.0	888	609	68.6	*84.4*
Waterloo	295,550.1	4,433	5,577	125.8	*126.7*
Western	358,928.0	5,384	5,944	110.4	*111.1*
Wilfrid Laurier	86,190.0	1,293	1,115	86.2	*107.9*
Windsor	139,801.0	2,097	1,909	91.0	*90.7*
York (Main)	267,405.0	4,011	3,586	89.4	*66.3*
York (Glen)	23,734.4	356	343	96.3	*126.3*
Total	3,592,861.6	53,893	52,434	97.3	*94.7*

Input Measure: Total NASM Inventory (excluding 16.0 Non-Assignable).

Space Factor: 0.015 NASM

System Average: 0.015 NASM
(Total Actual Maintenance space divided by Total NASM Inventory.)

Table 36

Student and Central Services Space (7-8, 11-15): Generated Space and Inventory, 1998-99

	FTE Students	Generated Space	Inventory NASM	Inventory / FTE Students	% I/G	*1995-96 % I/G*
Brock	7,842.9	15,686	9,564	1.2	61.0	*59.0*
Carleton	13,169.6	26,339	18,419	1.4	69.9	*60.4*
Guelph	12,562.8	25,126	21,404	1.7	85.2	*86.4*
Lakehead	5,710.5	11,421	9,651	1.7	84.5	*76.4*
Laurentian	4,567.6	9,135	11,874	2.6	130.0	*91.0*
Laurentian (Algo)	380.0	760	1,165	3.1	153.3	*89.5*
Laurentian (Hear)	105.6	211	957	9.1	452.9	*129.8*
McMaster	14,459.4	28,919	22,659	1.6	78.4	*82.1*
Nipissing	2,059.7	4,119	2,187	1.1	53.1	*49.0*
OCAD	1,926.4	3,853	1,279	0.7	33.2	*30.8*
Ottawa	19,017.0	38,034	19,913	1.0	52.4	*54.5*
Queen's	14,572.9	29,146	27,667	1.9	94.9	*94.1*
Ryerson	14,078.2	28,156	17,691	1.3	62.8	*66.7*
Toronto (St. Grge)	34,477.7	68,955	57,209	1.7	83.0	*86.2*
Toronto (Miss)	4,569.8	9,140	6,766	1.5	74.0	*86.0*
Toronto (Scar)	4,312.2	8,624	5,317	1.2	61.7	*67.5*
Trent	3,994.0	7,988	7,507	1.9	94.0	*87.4*
Waterloo	14,988.9	29,978	33,279	2.2	111.0	*112.6*
Western	22,958.5	45,917	33,965	1.5	74.0	*75.2*
Wilfrid Laurier	7,038.0	14,076	12,333	1.8	87.6	*100.7*
Windsor	9,846.3	19,693	17,784	1.8	90.3	*79.7*
York (Main)	26,996.8	53,994	31,554	1.2	58.4	*53.6*
York (Glen)	1,350.8	2,702	3,390	2.5	125.5	*107.1*
Total	240,985.7	481,971	373,533	1.6	77.5	*76.5*

Input Measure: Total FTE Students (as defined in Appendix D).

Space Factor: 2.0 NASM

System Average: 1.55 NASM per FTE Student
(A rounded total of recommended space factor ranges for the actual individual student central services categories divided by Total FTE Students.)

Table 37

Total Space (1-15): Generated Space and Inventory, 1998-99

	FTE Students	Generated Space	Generated per FTE	Inventory NASM	Inventory per FTE	% I/G	*1995-96 I/G*
Brock	7,842.9	76,512.4	9.8	53,006	6.8	69.3	*66.8*
Carleton	13,169.6	148,705.4	11.3	121,584	9.2	81.8	*75.9*
Guelph	12,562.8	193,689.4	15.4	184,320	14.7	95.2	*100.3*
Lakehead	5,710.5	68,679.1	12.0	54,673	9.6	79.6	*77.7*
Laurentian	4,567.6	57,627.5	12.6	61,312	13.4	106.4	*94.7*
Laurentian (Algo)	380.0	7,493.1	19.7	9,233	24.3	123.2	*98.1*
Laurentian (Hear)	105.6	4,367.2	41.4	4,484	42.5	102.7	*84.9*
McMaster	14,459.4	195,185.1	13.5	174,218	12.0	89.3	*89.6*
Nipissing	2,059.7	27,152.1	13.2	11,709	5.7	43.1	*41.1*
OCAD	1,926.4	28,630.8	14.9	10,839	5.6	37.9	*40.2*
Ottawa	19,017.0	224,063.1	11.8	174,920	9.2	78.1	*78.8*
Queen's	14,572.9	202,104.0	13.9	203,603	14.0	100.7	*98.1*
Ryerson	14,078.2	140,046.5	9.9	102,003	7.2	72.8	*78.8*
Toronto (St. Grge)	34,477.7	508,620.4	14.8	472,413	13.7	92.9	*97.8*
Toronto (Miss)	4,569.8	41,534.9	9.1	37,890	8.3	91.2	*96.5*
Toronto (Scar)	4,312.2	38,560.9	8.9	31,803	7.4	82.5	*85.2*
Trent	3,994.0	48,686.6	12.2	38,433	9.6	78.9	*89.1*
Waterloo	14,988.9	195,615.1	13.1	196,062	13.1	100.2	*100.5*
Western	22,958.5	304,962.6	13.3	248,004	10.8	81.3	*85.8*
Wilfrid Laurier	7,038.0	67,018.6	9.5	57,019	8.1	85.1	*88.5*
Windsor	9,846.3	105,373.7	10.7	105,620	10.7	100.2	*86.0*
York (Main)	26,996.8	262,322.5	9.7	180,600	6.7	68.8	*66.5*
York (Glen)	1,350.8	16,118.9	11.9	15,481	11.5	96.0	*90.3*
Total	240,985.7	2,963,069.8	12.3	2,549,230	10.6	86.0	*86.5*

The Inventory NASM figures do not necessarily agree with the Lab-Undergraduate and Lab-Grad & Faculty figures on Table 2, at some institutions. Only Class and Research Labs associated with Groups W to Z and A to E are included in this table.

A comparison of the Total Generated Space and existing Inventory in categories 1 through 15 per FTE Student.

Section 5

APPENDICES

Appendix A: Space Classification Scheme, Formula and Measures

Appendix B: COU Space Standards

Appendix C: List of Input Measures

Appendix D: Definitions

Appendix E: Program Classification Scheme

Appendix F: Calendar of Pertinent Information / Publications

Appendix A: Space Classification Scheme, Formula and Measures

Table of Contents

Formula Space

Category 1: Classroom Facilities 103
Category 2: Laboratory - Undergraduate 107
Category 3: Research Laboratory Space (Graduate & Faculty) 111
Category 4: Academic Departmental Offices and Related Space 113
Category 5: Library Facilities and Study Space 117
Category 6: Athletic/Recreation Space 121
Category 9: Plant Maintenance 123
Category 10: Administrative Office and Related Space 125

Student and Central Services 127
Category 7: Food Service 129
Category 8: Bookstore and Other Merchandising Facilities 129
Category 11: Audio-Visual / Television Facilities 131
Category 12: Central Services 131
Category 13: Health Service Facilities 133
Category 14: Common Use and Student Activity Space 133
Category 15: Assembly and Exhibition Facilities 135

Non-Assignable Space

Category 16: Non-Assignable Space 137

Non-Formula Space

Category 17: Residential Space 139
Category 18: Animal Space 141
Category 19: Other University Facilities 143
Category 20: Health Science Clinical Facilities 145

Category 1: CLASSROOM FACILITIES

Definition

A room primarily used for scheduled teaching purposes which does not require special equipment of a kind that makes the room unsuitable for classroom instruction (i.e., laboratory benches) and rooms directly serving such facilities.

Subcategories

1.1 Tiered Classrooms

Tiered or sloped-floored lecture theatres, lecture rooms, lecture demonstration rooms, and classrooms.

1.2 Non-Tiered Classrooms

Flat-floored lecture rooms, classrooms, seminar rooms, and tutorial rooms.

1.3 Classroom Service Space

Examination rooms, projection rooms, preparation rooms, closets, storage rooms, and other related areas.

Formula

The formula for generating classroom facilities including service space is as follows:

# of FTE Students x 1.2 NASM

(The FTE count is consistent with the numbers reported in the USIS-UAR submission as of November 1.)

Formula Assumptions

The demand for space is proportional to the number of courses those students enrol in, multiplied by the number of hours per week of scheduled instruction that each course requires for academic credit. The unit of measurement is usually referred to as a weekly student contact hour (WSCH). The amount of space required to accommodate one WSCH is derived from three separate variables. These are:

A (Area) = 1.4 NASM
Average university classroom station size
The area (A) required for a single seat or desk, expressed in square metres. This value varies according to the type of furniture used. An average value was chosen to represent a mix of classroom types and a provision for classroom service space.

H = 25 to 30 hours per week
Room utilization standard for a room Monday – Friday, during a 45 hour week
The number of hours per week (H) that a classroom is expected to be used for scheduled instruction. This range represents a minimum utilization standard which will vary by room type, use, and program.

S = 0.74 to 0.62 (i.e., 74% to 62% seats occupied when the room is used)
Station utilization standard when room is used.
The percentage of seats that are occupied (S) when the room is in use.

The product of the room utilization standard (H) and station weight (S) should produce a combined utilization co-efficient of 18.6. Therefore, H could be 25 and S could be 74%, or H could be 30 and S could be 62%. The classroom space formula is:

$$NASM / WSCH = A / (H \times S)$$

Assuming that the average weekly student contact hours is 16 hours (non-laboratory), that the A (area) value is 1.4, and that the H and S values are 30 and 0.62 respectively, then the space factor computed via formula is 1.2 NASM.

$$NASM / FTE\ Student = \frac{1.4}{30 \times .62} \times 16\ hours = 1.2\ NASM$$

Comments

While the total amount of classroom space generated using the COU space factor is considered adequate, mismatches between class section size and the size of available classrooms are problems on many campuses.

A report by a joint COU-"Ontario Ministry" Working Group on University Space Utilization, ***Classroom Space Utilization in Ontario Universities 1988-89***, included the following findings:

> In the thirteen Ontario institutions responding to the special classroom survey, 1,458 classrooms with over 90,000 seats show an average station area of 1.31 NASM. Support space was found to be 4.58% of the area of the classrooms reported; making the overall average station area 1.37 NASM. Several institutions commented on a shift from tablet-arm type furniture to tables and chairs in order to provide more writing surface to allow space for computer printouts and other instructional materials. This change in furniture styles will gradually increase the average station area.

Comparison of Unadjusted Standards / Guidelines for Classrooms (1990)

State	Hours/Week	Station Occupancy (%)	Area (NASF)
California	53.0	66.0	15.0
Colorado	30.0	67.0	15.0
Florida	58.5	60.0	22.0
Kansas	30.0	60.0	15.0
Maryland	30.0	70.0	17.6
Nebraska	30.0	65.0	16.0
New Hampshire	30.0	60.0	16.0
New Jersey	34.0	70.0	16.0
New York	30.0	60.0	16.0
Ohio	31.5	67.0	15.0
Oklahoma (3 terms)	60.0	80.0	16.0
Oregon	33.0	60.0	15.0
Tennessee	30.0	67.0	15.0
Utah	34.0	67.0	16.0
Virginia	30.0	60.0	15.0
Washington	33.0	70.0	18.0
Wisconsin	30.0	67.0	16.0
Ontario	30.0	62.0	15.0

Source: Survey of Space and Utilization Guidelines and Standards in the Fifty States. MGT Consultants. Exhibit 4.1.

Category 2: LABORATORY – UNDERGRADUATE

Definition

A room used for instruction of undergraduate students which requires special purpose equipment or is so arranged that use is restricted to a particular field of study; and rooms directly serving these facilities. Activities in these facilities would include student participation, experimentation, observation or practice in a field of study.

Subcategories

2.1 Scheduled Class Laboratory Space

Teaching laboratories, special subject rooms, instructional shops, typing laboratories, drafting rooms, art, dance and music studios, music practice rooms, language laboratories, computer terminal rooms and athletic facilities primarily used for instruction, and other specially designed rooms largely used for scheduled instruction, such as dental, rehabilitation, and psychology clinics.

2.2 Unscheduled Class Laboratory Space

This subcategory may be optionally used to classify general workrooms, drafting rooms, and other special-purpose facilities generally used for informal or irregularly scheduled instruction, or for practice.

2.3 Laboratory (Instructional) Support

Preparation rooms, balance rooms, laboratory storage rooms, demonstration rooms, animal areas, greenhouses, dark rooms, etc. directly serving the laboratory facilities.

Formula

The formula for generating undergraduate teaching facilities (including service space) is a four part formula with a different space factor for each of four academic program groupings:

Laboratory space for specific group (W, X, Y, Z)	=	WSLabCH for group	x	Space factor for group (0.8, 0.6, 0.5, 0.3)

WSLabCH (i.e. **W**eekly **S**tudent **Lab**oratory **C**ontact **H**ours) is the input measure for this category. They are computed as the product of the course enrolment and the hours of scheduled instruction received by each student enrolled during a typical academic week.

Formula Assumptions

The instructional laboratory formula is based on the following assumptions:

- It is recognized that there are differences in space requirements between disciplines; consequently four space standards, dependent upon discipline groups (denoted W, X, Y, Z) are used.
  Examples of disciplines: Group W: Agriculture, Engineering, Vet. Medicine
  Group X: Chemistry, Fine Arts, Geology
  Group Y: Anthropology, Geography, Psychology
  Group Z: Commerce, Mathematics, Sociology

- Station areas associated with the groups W, X, Y and Z were derived over time from data reported by the universities in the Ontario system together with standards used in other jurisdictions. The space factors are based on bench areas and facilities needs for the different disciplines. They include an allowance for preparation and storage space requirements.

- Space guidelines for teaching laboratories include a room utilization of 18 hours per week and 75% seat occupancy when in use. The relationship between the variables is described in the following table:

Group	Station Area (NASM) (incl. Service Space)	Utilization Rate Hours x Seat Util.	Space Factor NASM/ WSLabCH
W	10.80	18 x 0.75 = 13.5	0.8
X	8.10	18 x 0.75 = 13.5	0.6
Y	3.75	18 x 0.75 = 13.5	0.5
Z	4.05	18 x 0.75 = 13.5	0.3

$$\text{NASM per WSLabCH} = \frac{\text{Area per Station}}{\text{Scheduled Hours per Week} \times \text{Seat Utilization}}$$

Comments

The University timetable should be the primary source for deriving WSLabCH, augmented if needed by information in the university calendar.

There is unscheduled activity by groups or individuals for study or experimentation related to course work and assignments used for scheduled teaching and in other specially designed labs. However, this unscheduled use of labs is to be excluded from the contact hour count when determining laboratory facilities entitlement. It is assumed that the use of scheduled contact hours combined with an 18 hour room utilization rate will generate enough space to adequately accommodate these activities in the unscheduled hours.

For class labs that meet in multiple use facilities, for example, in theatres used for both drama instruction and general university assembly, it may be necessary to prorate.

An analysis of computer work space allocated for student use, but not associated with a particular program, was done in 1991. Such space should be available for individual student use in unscheduled mode and in addition to the computer spaces that are primarily used for scheduled instruction. The data analyzed indicate that the space per student is still not sufficient to warrant a separate category with a new space factor. This type of space is a variation of student study space provided in Category 5.2, Library Study Space.

Comparison of Unadjusted Teaching Lab Standards / Guidelines (1990)

State	Contact Hours / Week	Station Occupancy (%)
California	22.0	80.0
Colorado	20.0	80.0
Florida	20.0	80.0
Kansas	20.0	80.0
Maryland	21.0	78.7
Nebraska	20.0	65.0
New Hampshire	18.0	70.0
New Jersey	24.0	80.0
New York	24.0	80.0
Ohio	22.5	80.0
Oklahoma (3 terms)	48.0	80.0
Oregon	16.0	75.0
Tennessee	18.0	80.0
Utah	24.0	80.0
Virginia	23.0	70.0
Washington	27.0	80.0
Wisconsin	27.0	80.0
Ontario	18.0	75.0

Source: Survey of Space and Utilization Guidelines and Standards in the Fifty States. MGT Consultants. Exhibit 5.1.1.

Category 3: RESEARCH LABORATORY SPACE (Graduate & Faculty)

Definition

A room used for laboratory applications, research or training in research methodology which requires special-purpose equipment for staff or graduate student experimentation or observation, and preparation, service, and other rooms directly serving these facilities.

Subcategory

3.1 Laboratory Space

Faculty, graduate, and general research facilities.

3.2 Laboratory (faculty and graduate) Support Space

Rooms directly serving one or more research facilities which directly provide the necessary support to the research functions such as balance rooms, coat rooms, storage areas, dark rooms, technicians' office/workrooms, workshops, animal areas, and greenhouses.

Formula

The formula for generating research laboratory facilities (including service space) is a five part formula with a different space factor for each of five academic program groupings:

Research space for specific group (Group A, B, C, D, E)	=	Count	x	Space Factor for group (45, 30, 20, 10, 1)

where COUNT = # FTE Faculty + (50% # non-faculty researchers) + (50% # FTE graduate students)

Formula Assumptions

- It is recognized that there are differences in space requirements between disciplines; consequently, five space standards (denoted A, B, C, D, and E) are used.

Examples of disciplines:	Group A	Chemistry, Dentistry, Geology
	Group B	Civil Engineering, Forestry, Metallurgy
	Group C	Anthropology, Electrical Engineering, Geography (Physical)
	Group D	Geography (Human), Kinesiology, Library Science
	Group E	English, Mathematics, Sociology

- Station areas (i.e. space factors) associated with the groups A, B, C, D, and E were derived over time from data reported by the universities in the Ontario system together with standards from other jurisdictions.

- The formula assumes a direct relationship, which is consistent throughout all disciplines within an academic grouping, between the numbers of faculty, other researchers and graduate students associated with a department and the amount of research being done by that department.

Comments

Group E generates 1 NASM per Input Measure to provide some research or equivalent to research space which may be allocated as additional computer or other dedicated work space for use by academic departments.

Some universities have large research facilities that are used by other universities or non-university researchers. In the reporting of the inventory, this space should be pro-rated, with the portion used for non-institutional purposes classified in Category 19.

Category 4: ACADEMIC DEPARTMENTAL OFFICES AND RELATED SPACE

Definition

A room usually assigned to one or more individuals on a permanent basis, containing office-type equipment and used by faculty, departmental administrative and support staff, and students, or a room directly serving these facilities.

Subcategories

4.1 Faculty Offices

Single or multiple-occupancy offices for teaching and research faculty with rank up to and including department chairs.

4.2 Other Academic Appointments Offices

Office space used by post-doctoral fellows, visiting professors, adjuncts and other research staff, not holding a regular faculty appointment.

4.3 Graduate Student Offices

Single or multiple-occupancy rooms assigned to graduate students for study and to graduate and undergraduate students in their capacity as tutors, teaching or research assistants.

4.4 Departmental Support Staff Offices

Office space used by demonstrators, technicians, other professional staff, administrative, clerical and secretarial support staff to academic departments.

4.5 Office Support Space

Rooms directly serving office space in this category such as conference rooms, computer rooms not for student use, special reference libraries, file rooms, vaults, duplicating rooms, waiting and reception areas, interview rooms, storage areas, private toilets, lunch rooms, and private departmental lounges.

Formula

The formula for generating academic departmental office facilities has four components:

Faculty	(# FTE Faculty + 15%) X 13 NASM
Non-Academic Staff	# FTE Non-Academic Staff requiring offices X 13 NASM
Graduate Students	# FTE Graduate Students X 4 NASM
Office Support Space	30% of the total space generated for faculty, administrative staff and graduate students

Formula Assumptions

In recognition of the disparity between the FTE faculty count of an institution and the requirement to provide some office accommodation to other academics who would not be fully represented by the FTE count (cross-appointments, part-time appointments, research associates, professors emeriti, post-doctoral fellows, status only appointments, visiting scholars, stipend staff, faculty on sabbaticals who remain on campus, etc.), the FTE faculty input measure is supplemented by 15% (post-doctoral fellows).

Although 12 NASM is the accepted planning standard for a typical single office, a space factor of 13 NASM is used in the formula. This is to recognize existing office configurations, especially in older university buildings, where the average office size is larger. Further, it is recognized that deans and chairs are usually allocated larger offices than the average.

The standard for non-academic staff offices is based on the same average office size used for academic staff. Although the layout of the spaces may be different, it is assumed that the requirement for space is the same. Laboratory technicians, library staff and staff of ancillary units are excluded from the FTE count as their office/work space is inventories in other categories.

The graduate student office standard is based on the assumption that all graduate students generate office type space. This is in addition to the space they generate in the research laboratory category and the library category.

The requirement for office support space is directly related to the number of faculty, staff and graduate students in an institution.

That 30% of the total entitlement for office facilities represents an average across all departments.

The space generated under the formula is to accommodate a wide range of activities from photocopiers and file storage to conference rooms, departmental lounges, and resource rooms.

Comments

Many older buildings in the Ontario system have been built with larger offices than the standard. For these institutions, the total amount of space inventoried when measured against the space generated by the formula may appear adequate but there will be too few office units. A 1987 analysis of inventory in the office subcategories showed an average office size of 14.1 NASM per FTE faculty and 13.5 NASM for all individuals needing offices.

Library office space is not included in this category because it is often difficult to distinguish what area is strictly office space and what area is library service for referencing, cataloguing and distributing books. The library service space formula covers this requirement.

The Other Research Appointments input measure is not used to generate office space, since the additional 15% of faculty should account for this group.

There is not yet enough empirical evidence to incorporate additional computing space in the office standards.

Non-academic office space is calculated based on the FTE of non-academic staff as the institutional ratios of non-academic staff to faculty (and students) are quite variable.

FTE faculty and student data are readily collectible and verifiable but there is no equivalent data base for non-academic staff. There is a need to improve the collection of non-academic staff data at the system level.

The 13 NASM standard for offices is consistent with the Ontario government office space allowance for professional staff (i.e. 13.5 NASM).

The provision of offices for graduate students is a matter of institutional policy; in some cases only doctoral students or teaching assistants are assigned office space.

Category 5: LIBRARY FACILITIES AND STUDY SPACE

Definition

A room or group of rooms used for the acquisition, processing, storage, circulation, study, or use of books, periodicals, manuscripts and other media of published information generally under the administration of the university library system and accessible to the university population at large and rooms directly serving these facilities.

Subcategories

5.1 Library Collection Space

Stack and storage areas for books, archives, maps, documents, records, tapes, slides, micromaterials, periodicals, and music scores.

5.2 Study Space

Library reading rooms, study carrels, open-stack reading rooms, and study areas available to the general university population. Study area rooms located in facilities administered by the university library system or in residences or academic departments.

5.3 Library Support Areas

Office and related areas for library administration, catalogue area, circulation desk, processing areas, bookbinding and repair areas, acquisition and cataloguing work areas, and library staff lounges.

Equivalent Volumes

An equivalent volume represents one bound volume. Other library materials are converted into bound volumes. Materials are given in terms of 125 bound volumes, since 125 bound volumes represents a standard stack – a single faced section with dimensions approximately 7.5 feet high, with seven shelves, 3 feet wide.

Material	Items	Units	Equivalency
Monograph Volumes – excluding Reference	125	# volumes	125
Reference	45	# volumes	125
Documents and Technical Reports	650	# reports	125
Archival Materials	6.4	linear metres	125
Serial Volumes – bound and unbound	50	paper copy	125
Maps	400	# sheets	125
Microfilm	250	# reels	125
Microfiche	10.500	# items	125
CD-ROM	575	# titles	125
Floppy Disks	1.925	# units	125
Magnetic Tape	125	# units	125
Learning Kits	45	# items	125
Audio-Visual Holdings	125	# titles	125
Slides	5040	# slides	125
Printed Music	275	# scores	125

Source: Collaboration between the Ontario Council of Universities Libraries (OCUL) and COU Committee on Space Standards and Reporting. See Council of Ontario Universities' Users Guide page 2.4.3.4 for more details.

Formula: Library Collection Space

The formula for generating space for library collections is as follows:

For compact storage:	0.004 NASM per equivalent volume for 10% of total collection
For remainder of collection:	0.007 NASM per equivalent volume for next 300,000 volumes
	0.006 NASM per equivalent volume for next 300,000 volumes
	0.005 NASM per equivalent volume for remainder of collection

Formula Assumptions

The collection space formula assumes that 125 bound volumes can be shelved on a standard stack unit, leaving 15% of the shelf space for sorting books when they are returned to the shelves. A standard stack is 2.28 m. high, 0.91 m. wide, 0.25 m. deep, and has 7 shelves. In Volume 6 of Building Blocks, it was determined that a standard stack unit occupied approximately 0.75 NASM, allowing approximately 1.1 m. for an aisle space. Therefore, 1 volume would require 0.0059 NASM. The formula also assumes that 10% of a collection will be housed in compact storage. An allowance of 0.004 NASM per volume assumes an increase in density by approximately 66% to 207 volumes per standard shelving unit.

Formula: Study Space

The formula for generating study space is:

0.5 NASM / FFTE undergraduate student

1.0 NASM / FFTE professional undergraduate student

0.7 NASM / FTE graduate student

Formula Assumptions

The formula assumes a carrel size of 1.85 NASM and enough carrels to accommodate 25% of the undergraduate population *(1.85 x 0.25 = .46 NASM/undergraduate)* and 40% of the graduate population *(1.85 x 0.40 = .7 NASM/graduate student)*. In professional programs where study habits require a larger carrel, 2.78 NASM for 40% of the population is assumed *(2.78 x 0.4 = 1.11 NASM/professional undergraduate)*.

Note: these numbers were originally in imperial measure and were rounded in conversion to metric.

Formula: Library Support Areas

The formula for generating space for library service and support space is as follows:

0.25 x (area generated for Stack and Study space)

Formula Assumptions

The library support formula is based on the following assumption:

The size of the collection and number of users are the two most significant factors affecting the number of staff required to assist in the circulation and handling of books, periodicals and other media of published information. The standard for support space has been used, therefore, on a fixed percentage of collection size and user population. In test universities, the average was 25%.

Comments

The volume equivalencies were revised in 1995 by the Ontario Council of University Libraries (OCUL)

It is recognized that some efficiencies can be achieved through the use of compact storage.

Stack space may appear to exceed the standards if service space and non-assignable space such as phantom fire corridors are not reported as defined.

Graduate students also generate space in the office and research laboratory categories.

The increasing use of computer terminals and the provision of decentralized study space may moderate the need for library study space at some institutions.

A trade-off between Stack and Study space is increasingly a part of library space management.

Category 6: ATHLETIC / RECREATION SPACE

Definition

All indoor areas used by students, staff, or the public for athletic activities, either for recreational or competitive purposes, and rooms directly serving these facilities.

Subcategories

6.1 Athletic Activity Areas

Gymnasia, dance studios, swimming pools, basketball, handball and squash courts, combative rooms, ice rinks, indoor tracks, indoor rifle and archery ranges, and activity areas including those within field houses.

6.2 Athletic Seating Areas

All permanent seating and observation areas in gymnasia, swimming pools, field houses, ice rinks, and other indoor activity areas.

6.3 Athletic Service Space

All ancillary areas directly serving the above such as locker rooms, shower rooms, washrooms, coaches' rooms, equipment supply rooms, and rooms serving athletic facilities.

Formula

0.9 NASM / FTE student, plus

2,000 NASM for institutions with less than 4,000 students

1,000 NASM for institutions with 4,000 to 8,000 students

Formula Assumptions

The space factor for recreation and athletic facilities assumes that the FTE student population is the primary user. The actual factor is derived from institutional averages. A sliding scale approach is used to ensure that smaller institutions generate sufficient space to cover a building of 4,000 NASM, the minimum area feasible to accommodate a pool, gymnasium and support space.

Comments

Assessing the adequacy of athletics and recreation space is a complex matter. Institutions are quite diverse in the match between generated space and inventories. Requirements for athletic and recreation space vary according to an institution's commitment to inter-university athletics, the recreational interests of its students, the proportion of students in residence, the availability of other facilities in the community, and the mix of extracurricular activities with academic programs in Physical Education and related disciplines.

There may be errors in reporting of athletics inventory that is primarily for community or academic program use. The definitions are clarified so that any specialized space used exclusively or almost exclusively for academic programs is reported in the class lab category.

Category 9: PLANT MAINTENANCE

Definition

Space associated with the operation and maintenance of university buildings, grounds, vehicles and other elements of the physical plant.

Subcategory

9.1 Plant Maintenance

Shops and storage areas for carpentry, plumbing, painting, electrical and other trades, lunch, locker and change rooms for maintenance and custodial staff, garages for maintenance vehicles and all ground equipment, greenhouses and related areas, and garages for storage and repair of vehicles and boats.

Formula

1.5% x Physical Plant Net Assignable Area *

* which is the sum of NASM categories 1-15 and 17-20

Category 10: ADMINISTRATIVE OFFICE AND RELATED SPACE

Definition

A room usually assigned to one or more individuals on a permanent basis containing office-type equipment and used by administrative and support staff, or a room directly serving these facilities.

Subcategories

10.1 Office Areas

Single or multiple-occupancy rooms for executives, administrative staff, deans and directors of major academic divisions, associate or vice-deans and their immediate support personnel.

10.2 Office Support Space

Rooms directly serving office space in this category such as conference rooms, special reference libraries, file rooms, vaults, duplicating rooms, computer rooms for administrative use, waiting and receptions areas, interview rooms, storage areas, private toilets, lunch rooms and private departmental lounges.

Formula

The formula for generating administrative office facilities has two components:

Offices:	# FTE Non-Academic Staff requiring offices x 13 NASM
Office Support Space:	30% of the total space generated for the Non-Academic Staff

Formula Assumption

The requirement for office support space is directly related to the number of non-academic staff requiring offices. 30% of the total entitlement for office facilities represents an average across all departments. The space generated under the formula is to accommodate a wide range of activities from photocopiers and file storage to conference rooms, departmental lounges and resource rooms.

Categories 7, 8, 11, 12, 13, 14, 15: STUDENT AND CENTRAL SERVICES

Definition

Food services, bookstore and other merchandising facilities, audio-visual / television facilities, central services, health service facilities, common use and study activity space, and assembly & exhibition facilities have been combined into Student and Central Services for the purpose of calculating space entitlement. This allows an institution to trade off a need for facilities in one area with those in a related category.

Formula

FTE x 2.0 NASM

The following range of values are suggested for each category, which reflect the use of space in the Ontario universities:

Category #	Category Name	NASM / FTE student
7	Food Service	0.50 to 0.70
8	Bookstore and Other Merchandising Facilities	0.10 to 0.20
11	Audio-Visual / Television Facilities	0.05 to 0.10
12	Central Services	0.10 to 0.30
13	Health Service Facilities	0.03 to 0.05
14	Student Activity Space	0.50 to 0.70
15	Assembly and Exhibition Facilities	0.15 to 0.40

Category 7: FOOD SERVICE

Definition

A room or group of rooms used for preparing or eating food or which directly serve these facilities including central facilities located in residences and faculty clubs, whether operated by the university or an external company.

Subcategories

7.1 Food Facilities

Dining rooms, cafeterias, snack bars, coffee shops, restaurants, vending machine and other refreshment areas primarily used for food service.

7.2 Food Facilities Service

Kitchen, servery, all food preparation areas, dishwashing areas, refrigeration and freezer rooms, kitchen storage rooms, receiving areas, refuse areas, and staff lunch, locker and private washrooms.

Category 8: BOOKSTORE AND OTHER MERCHANDISING FACILITIES

Definition

A room or group of rooms used to sell products or services, exclusively or primarily for the university population, and rooms directly serving these facilities.

Subcategory

8.1 Bookstore / Merchandising

For example: bookstores, Canada Post office, banks, travel agencies, other stores and associated service space operated by the university or commercial enterprise renting space from the university. Includes staff offices in support of these functions.

Category 11: AUDIO-VISUAL / TELEVISION FACILITIES

Definition

A room or group of rooms used in the production, distribution and storage of non-print instructional media, and rooms directly serving these facilities, providing campus-wide rather than exclusively departmental services.

Subcategory

11.1 AV / TV Facilities

Radio, TV, sound, photography, and graphic studios, film and tape libraries, control rooms, storage rooms, recording rooms, repair and servicing work rooms, dark rooms, preparation rooms, and similar related areas.

Category 12: CENTRAL SERVICES

Definition

A room or group of rooms used to provide campus-wide services for both academic and non-academic sections of the university, and rooms directly serving these facilities.

Subcategories

12.1 Computing Facilities

Central data processing facilities, computer rooms, key-punch areas, technical service and repair areas and their support spaces.

12.2 Other Central Services

Central and regional printing and duplicating shops, central receiving areas, central stores, university mail rooms, laundry and drying rooms located in a central laundry, and technical service and repair areas.

12.3 Student Computer Rooms

Computer or terminal rooms available for use by students for non-scheduled instruction or study.

Category 13: HEALTH SERVICE FACILITIES

Definition

A room or group of rooms intended to supply health services primarily to the general university population, and rooms directly serving these physical and wellness services facilities

Subcategory

13.1 Health Service Facilities

Infirmaries, first aid rooms, physiotherapy rooms, doctors' offices / examining rooms, their support areas, offices and related areas within health service facilities, and first-aid rooms located elsewhere and used for the general university.

Category 14: COMMON USE AND STUDENT ACTIVITY SPACE

Definition

A room or group of rooms accessible to the general university population intended for recreation, rest, or relaxation, or rooms directly serving these facilities.

Subcategories

14.1 Student Offices and Support Space

Offices and support space for student government, publications, and clubs.

14.2 Recreational Facilities and Service

Bowling alleys, pool and billiard rooms, cinemas, television rooms, chess rooms, video games rooms, card playing areas, music listening areas, hobby rooms, storage and equipment issue rooms and pubs.

14.3 Lounge and Service Space

All general lounge space and kitchenettes, whether for students, faculty, or administrative staff, lounges in residences if available to non-residents, and lounges in faculty clubs, including related service space.

Category 15: ASSEMBLY AND EXHIBITION FACILITIES

Definition

A room or group of rooms intended to serve the general university population and to be used for dramatic, musical, or devotional activities or for exhibition purposes, and rooms directly serving these facilities.

Subcategories

15.1 Assembly Facilities

Theatres, auditoria, concert halls, chapels, and convocation halls and ancillary areas such as coat rooms, ticket booths, concession booths, dressing rooms, projection rooms, storage and control rooms.

15.2 Exhibition Facilities

Museums, art galleries, other exhibition areas, greenhouses used for display only and supporting areas.

Category 16: NON-ASSIGNABLE SPACE

Definition

A room or area that is not available for assignment to the occupants of a building but which is necessary for the general occupation or mechanical support of one or a number of buildings.

Subcategories

16.1 Central Utility Plant

All boiler rooms, refrigeration plant, electrical transformer stations, cooling towers, compressing stations, water treatment facilities, recycling facilities, hazardous waste storage, incinerator, distribution systems, service tunnels and their support areas serving more than one building or the entire campus.

16.2 Other Non-Assignable Areas

Areas used or occupied by janitorial staff (janitors' closets), mechanical and electrical spaces, and incinerator serving one building, and public washrooms.

Circulation spaces required to provide general access within a building (i.e. corridors, stairwells, elevators) to a single room or work area (including their integral support areas) e.g. circulation space is required to provide general access such as fire corridors in office landscaped areas, escape routes in warehousing areas or large congested machine shops, or routes necessary to provide physical access to some subdivision or block of space. Loading docks and service tunnels not assigned to a specific department.

16.3 Inactive Unassignable

Spaces which would require long lead time and extensive work to make them available for occupancy such as those left unfinished at the time of construction or those undergoing major repairs or renovations, i.e. large areas of the building being out of service for many months.

Category 17: RESIDENTIAL SPACE

Definition

A room or rooms used to accommodate one or more individuals and the ancillary areas in direct support of such rooms.

Subcategories

17.1 Residence Living Space

Single or multiple-occupancy bedrooms, apartments or other residential units (corridor).

17.2 Residence Service Space

Laundry rooms, recreational areas, music rooms, games rooms, locker rooms, lounges only available to occupants of that residence, tuck shops, and administrative offices in direct support of residential facilities.

Category 18: ANIMAL SPACE

Definition

Animal facilities in overall support of teaching or research and not normally integrated with or under the control of academic departments.

Subcategories

18.1 Specialized Central Areas

Rearing, conditioning, and holding facilities before animals are ready or required for teaching and research purposes as well as facilities for long-term holding and care of animals following surgical or other investigative treatment, located either on or off campus.

18.2 Farm-Type Areas

Barn structures, feed storage, and field service areas.

Category 19: OTHER UNIVERSITY FACILITIES

Definition

Any room or area not included in Categories 1 through 18.

Subcategories

19.1 Day Care Facilities

19.2 Rifle Ranges and Other Space in Support of Military Training

19.3 Merchandising Facilities Not Exclusively or Primarily Serving the University Population

19.4 Demonstration Schools, and Other Instructional Institutions for Non-University Students

19.5 Inactive Assignable Space

Spaces which are deemed to be available for immediate occupancy but which have not yet been assigned to individuals or groups.

19.6 Non-Institutional Agencies Occupying University Space

19.7 Instructional Service Activities to the External Community

Category 20: HEALTH SCIENCE CLINICAL FACILITIES

Definition

Space owned or operated by the university that is used in direct support of instruction, research and service for clinical health science disciplines. Includes health care areas, such as patient bedrooms and bathrooms, nurses' stations, surgery, treatment rooms, waiting rooms and service and supply areas; all measures not included in Categories 1 – 15 of the space formula and for which capital funding responsibility is assumed to be that of the Ministry of Health.

	Space Category	Space Factor		Input Measure
1	Classroom Facilities	1.2 NASM		FTE Students
2	Laboratory - Undergraduate	Group W Group X Group Y Group Z	0.8 NASM 0.6 NASM 0.5 NASM 0.3 NASM	Weekly Student Laboratory Contact Hours
3	Research Laboratory	Group A Group B Group C Group D Group E	45 NASM 30 NASM 20 NASM 10 NASM 1 NASM	FTE Faculty + 0.5 Other Research Appointments + 0.5 Graduates
4	Academic Departmental Offices	13 NASM *(plus an additional allowance of 15% for academics not included in the faculty count)* 4 NASM		FTE Faculty FTE Graduate Students
5	Library Facilities			
	Stack (Compact Storage)	0.004 NASM		Equivalent volumes (EV) for 10% of total collection
	Stack (remainder)	0.007 NASM 0.006 NASM 0.005 NASM		EV for 0-300,000 volumes. EV for next 300,000 volumes EV for rest of collection
	Study	0.5 NASM 1.0 NASM 0.7 NASM		FTE Undergraduate FTE Prof Undergrad FTE Grad. Student
	Service	*0.25 x (Stack and Study)*		

	Space Category	Space Factor	Input Measure
6	Recreation/Athletic Space	0.9 NASM *plus* - *2,000 NASM for institutions with less than 4,000 FTE* *1,000 NASM for institutions with 4,000 to 8,000 FTE*	FTE Student
9	Plant Maintenance	*0.015 x Total NASM Inventory*	
10	Administrative Offices	13 NASM	FTE Non-Academic Staff requiring offices
	Office Services	*0.3 x Total Generated Faculty, Graduate Students and Non-Academic Staff*	
STUDENT & CENTRAL SERVICES		2 NASM	FTE Student
7	Food Service	0.5 to 0.7 NASM	FTE Student
8	Bookstore & Other. Merch. Facilities	0.1 to 2.0 NASM	FTE Student
11	Audio-Visual/TV Facilities	0.05 to 0.35 NASM	FTE Student
12	Central Services	2 NASM	FTE Student
13	Health Service Facilities	0.03 to 0.05 NASM	FTE Student
14	Common Use and Student Activity Space	0.5 to 0.7 NASM	FTE Student
15	Assembly and Exhibition	0.1 to 0.4 NASM	FTE Student

	Space Category	Input Measure
1	Classroom Facilities	FTE Students
2	Laboratory - Instructional	Scheduled Lab. Weekly Student Contact Hours
3	Laboratory - Graduate and Faculty	FTE Faculty Other Research Appointments FTE Graduate Students
4	Academic Departmental Offices	FTE Faculty FTE Graduate Students FTE Non-Academic Office Staff requiring offices
5	Library and Study Facilities	Library Collections (Equivalent Volumes) FTE Undergraduate Students FTE Graduate Students FTE Professional Students
6	Recreation / Athletic Space	FTE Students
7	Food Service	FTE Students
8	Bookstore & Other Merchandising Facilities	FTE Students
9	Plant Maintenance	Total Net Assignable Inventory (categories 1-15 and 17-20)
10	Administrative Offices	FTE Non-Academic Office Staff
11	Audio-Visual Television Facilities	FTE Students
12	Central Services	FTE Students
13	Health Service Facilities	FTE Students
14	Common Use & Student Activity Space	FTE Students
15	Assembly and Exhibition Facilities	FTE Students

Building Blocks
Series of seven COU publications which were published between 1972 and 1988. These publications led to the development of the current COU space standards.

For a list of the publications, please see Appendix F.

Ontario Ministry
"Ontario Ministry" refers to the Ontario Ministry responsible for post-secondary education. Until February 1993, it was called Ministry of Colleges and Universities; from February 1993 until July 1999 it was called Ministry of Education and Training, and from July 1999 to present it is called Ministry of Training, Colleges and Universities.

Gross Area
The sum of the floor areas included within the outside faces of exterior walls for all stories, or areas, which have floor surfaces.

Net Assignable Square Metres (NASM)
The amount of area which can be used by the occupants of the building.
The sum of all areas on all floors of a building assigned to, or available for assignment to, an occupant, including every type of space functionally usable by an occupant (except Custodial, Circulation and Mechanical area).

Actual Space
This refers to the inventory of space reported by each institution.

Space Formula / Standards
A space standard is a common measurement which may be used to establish a goal for utilization, or allocation of space

Space Factor
A space factor is a multiplier resulting from the interaction of standards used for a particular type of space.

Input Measure

Input Measures are used in the calculation of space requirements for the first 15 of the categories, for which quantitative space factors have been determined.
Input Measures include: student enrolment, faculty, research appointments, and non-academic staff full-time equivalent positions, laboratory contact hours, and equivalent volumes in the library calculations.

Generated Space

Generated space is the space the institution should have, based on the product of the input measure and the COU space factor for each space category.

Formula Space

Usable or assignable space for which space standards could normally be developed. The formula categories provide for the full range of functions and services needed in a contemporary university. There are 15 categories of formula space: classroom, undergraduate laboratory, research laboratory, academic offices, library, athletic, food services, bookstore, plant maintenance, administrative offices, AV/TV, central services, health services, student activity space and assembly space.

Non-Assignable Space

A room or area that is not available for assignment to the occupants of a building, but which is necessary for the general occupation or mechanical support of one or a number of buildings. This space is counted on category 16. For a more detailed definition, please see Appendix A: 16.0 Non-Assignable Space.

Non-Formula Space

These are highly specialized facilities generally of a unique nature. There are 4 categories of non-formula space, which are reported under categories 17 through 20. They include: residence, animal space, other facilities and health science clinical facilities.

Total Net Assignable Inventory

All net assignable space inventory for Categories 1-20, excluding Category 16.

FTE Students

(1) FTE Undergraduate Students

The definitions for student enrolment currently contained in the MTCU Operating Formula Manual will govern the input measures as they pertain to students.

(2) FTE Graduate Students

See definition for FTE Undergraduate Students.

(3) Professional Students

Enrolments for professional programs are the count of students in post-baccalaureate programmes leading to a professional degree.

NOTE: Affiliated institutions (both Arts & Science and Theological) are included as of November 1, 1992.

Laboratory Weekly Student Contact Hour

The total weekly-student-contact-hours of laboratory instruction offered by a university as part of a programme of studies leading to a degree or diploma. The contact hours are computed as the product of the course enrolment and the hours of scheduled instruction received by each enrolled student during a typical academic week.

Laboratory weekly-student-contact-hours of laboratory instruction pertains to those contact hours of courses or portions of courses in which the instructional activity is facilitated by demonstration or experimentation requiring additional equipment not ordinarily available in classrooms.

A contact hour is the time that the instructor of the course (or lab assistant) is supervising a formal laboratory session in a specialized teaching facility.

Library Collections (Equivalent Volumes)

The library materials identified in the university library catalogue are to be included.

Equivalent volumes

An equivalent volume represents one bound volume. Other library materials, including media storage units, are converted into bound volumes.

The volume equivalencies and categories of library material were reviewed and updated in consultation with the Ontario Council of Universities Libraries (OCUL) in September, 1995. The categories are similar to that reported by OCUL.

For details of volume equivalencies see Appendix A (Category 5: Library Facilities and Study Space).

FTE Faculty

The university's faculty count is to include all persons, up to and including department heads or chairmen, holding an academic appointment and involved in teaching, who receive remuneration via the university from all salary funding sources.

Other Research Appointments (FTE)

Generators of research who are not regular faculty as defined in FTE Faculty, but who have similar research space requirements. This category includes post-doctoral fellows at any salary, and other equivalent-to-faculty research appointments, only if the annualized salary paid via the university (irrespective of funding source) is equal to or higher than the floor of the assistant professor range at that institution.

Research appointments located under category 20 (Health Science Clinical Facilities) are excluded.

FTE Non-Academic Office Staff

The full-time equivalent of all filled established positions for *secretarial, clerical, professional and management staff* with appointments of at least three months' duration as of 1 October. This will include non-academic office staff in teaching and research units, central computing and data processing, physical planning and plant operations, student services, academic services and administration, not included in other categories.

COU space standards make use of program or discipline groups in the generation of instructional labs and research space.

Code	Program/Discipline	Category 2 Group W - Z	Category 3 Group A - E
1.00	EDUCATION		
1.18	Elementary/Secondary Teacher Training	Y	E
1.23	Higher Education, Post-Secondary Teacher Training	Y	E
1.36	Kindergarten, Pre-School Teacher Training	Y	E
1.38	Non-Teaching Fields	Y	E
1.39	Physical Education	Y	D
1.40	Kinesiology, Human Kinetics and Kinanthropology	Y	D
1.41	Recreation	Y	E
1.99	Other, not elsewhere specified	Y	E
2.00	FINE AND APPLIED ARTS		
2.03	**Fine Art**	X	**D**
	Visual Arts		C
	Fine Arts, Art Conservation		D
2.05	Music	X	E
2.08	Other Performing Arts	X	E
2.14	Applied Arts (eg. Industrial Design, Design)	X	E
2.99	Other, not elsewhere specified	X	E
3.00	HUMANITIES AND RELATED		
3.03	Classics, Classical and Dead Languages	Z	E
3.05	English Language and/or Literature	Z	E
3.06	French Language and/or Literature	Z	E
3.09	History	Z	E
3.10	Journalism	Z	E
3.11	Languages and/or Literatures, Other	Z	E
3.12	**Library Science**	Z	**E**
3.13	Other Records Science	Z	D
3.14	Linguistics	Z	E
3.17	Other Mass Communication Studies	Z	E
3.21	Philosophy	Z	E
3.24	Religious Studies	Z	E
3.25	Theological Studies	Z	E
3.27	Translation and Interpretation	Z	E
3.99	Other, not elsewhere specified	Z	E

** Changes to category groupings in bold.

Code	Program/Discipline	Category 2 Group W - Z	Category 3 Group A - E
4.00	SOCIAL SCIENCES AND RELATED		
4.03	Anthropology	Y	D
4.06	Archaeology	Y	D
4.08	Canadian Studies	Z	E
4.09	Area Studies, Other	Z	E
4.12	Commerce, Management, Business Administration	Z	E
4.13	Criminology	Z	E
4.14	Specialized Administration Studies	Z	E
4.15	Demography	Y	D
4.27	Economics	Z	E
4.30	Geography	Y	D
	Physical Geography	Y	C
	Human Geography	Y	D
4.33	Law and Jurisprudence	Z	E
4.40	Man/Environment Studies	Y	D
	Urban & Regional Planning, Environ. Studies	Y	E
4.43	Political Science	Z	E
4.46	Psychology	Y	C
4.47	Secretarial Studies	Z	E
4.49	Social Work and Social Welfare	Z	E
4.52	Sociology	Z	E
4.55	Military Studies	Z	E
4.57	Other Social Services	Z	E
4.99	Other, not elsewhere specified	Z	E
5.00	AGRICULTURAL AND BIOLOGICAL SCIENCES		
5.03	Agriculture (Animal, Plant, Soil Science)	W	A
5.06	Biochemistry	X	A
5.09	Biology	X	A
5.12	Biophysics	X	A
5.15	Botany	X	A
5.16	Fisheries and Wildlife Management	X	A
5.18	Household Science and Related	Y	D
5.21	Veterinary Medicine	W	A
5.22	Veterinary Sciences	W	A
5.23	Veterinary Medicine Specialties	W	A
5.24	Zoology	X	A
5.99	Other, not elsewhere specified	X	A

** Changes to category groupings in bold.

Code	Program/Discipline	Category 2 Group W - Z	Category 3 Group A - E
6.00	ENGINEERING AND APPLIED SCIENCES		
6.03	Architecture	X	E
6.05	Aeronautical and Aerospace Engineering	W	B
6.06	**Chemical Engineering**	W	**A**
6.07	Civil Engineering	W	B
6.08	**Design, Systems Engineering**	**X**	**C**
6.09	Electrical Engineering	X	C
6.10	Industrial Engineering	W	B
6.11	Mining Engineering	W	C
6.12	Mechanical Engineering	W	B
6.13	Metallurgical Engineering	W	B
6.14	**Other Engineering**	W	**C**
6.15	Engineering Science	X	B
6.16	Engineering General	W	B
6.20	Forestry	X	B
6.22	Landscape Architecture	X	E
6.99	Other, not elsewhere specified	W	B
7.00	HEALTH PROFESSIONS AND OCCUPATIONS		
7.03	Dentistry (Professional)	X	A
7.04	Dental Specialties	X	A
7.05	Medicine (Professional)	X	A
7.06	Basic Medical Sciences	X	A
7.08	Medical Specialties	X	A
7.10	Paraclinical Sci (Microbiology, Immunology, Pathology)*		
7.12	Surgical Specialties	X	A
7.15	Nursing	Z	E
7.18	Optometry	X	A
7.21	Pharmacy	X	B
7.24	Epidemiology and Public Health	X	D
7.27	Rehabilitation Medicine	X	C
	Audio-Speech Therapy, Commun Disorders	X	B
	Occ., Rehab, Physical Therapy, App Health Sci.	X	D
7.36	Medical Technology	X	B
7.99	Other, not elsewhere specified	X	A
8.00	MATHEMATICS AND PHYSICAL SCIENCES		
8.06	Computer Science	Z	D
8.12	Mathematics	Z	E
8.15	Chemistry	X	A
8.18	Geology and Related	X	A
8.21	Metallurgy, Materials Science	W	B
8.24	Meteorology	X	A
8.27	Oceanography and Water Studies	X	A
8.30	Physics (eg. Astronomy, Aerospace Sciences)	X	A
8.99	Other, not elsewhere specified	X	A

* Do not report corresponding inventory. See category 20.
** Changes to category groupings in bold.

Revised: 2000 02

1964-1969 Ontario universities received capital monies through a project approval procedure.

Oct. 2, 1967 Joint Capital Studies Committee began work to develop a capital formula to incorporate many of the features sought in the operating grants formula: objectivity and equity, consistent standards, the opportunity for the provincial government to exert a primary control over its total obligation, and an incentive for each institution to allocate and manage its resources.

Dec. 1967 A contract was awarded to Taylor, Lieberfeld and Heldman to do a physical inventory and utilization study of all Ontario universities.

1968-1969 Interim capital formula was derived. Committee on University Affairs stated that the province was entering an era when capital resources would become scarcer.

Aug. 1970 COU published a draft report with comments and guidelines on space standards that might be incorporated in a space formula.

July 1971 The Committee on Capital Financing, with the approval of COU, opted to take action in the development of a proposal for a capital formula. Four Task Forces were established:

Task Force - Space and Utilization: This Task Force was asked to prepare a space and utilization guide for the submission to the COU Committee on Capital Financing with a view to the guide being incorporated with appropriate cost data in a capital funds allocation system. Membership included five universities: Brock, Carleton, Guelph, McMaster and Queen's.

1972 **Published: Building Blocks: Background Studies on the Development of a Capital Formula for Ontario. Volume 1: Report of the Task Force-Space and Utilization. 1972. (# 72-9)**

Published: Building Blocks: Volume II: Report of the Task Force-Space for Education. July 1972. (#72-11)

Task Force – Health Sciences (Capital)
Published: Building Blocks: Volume III: Report of the Task Force- Space for Health Sciences. Nov 1972. (#72-10)

Task Force – Building Costs: This Task Force was to study and comment on the past costs and quality of university construction and to provide appropriate cost multipliers.
Published: Building Blocks: Volume IV: Report of the Task Force-Building Costs. July 1972. (#72-12)
Published: Building Blocks: Supplement to Volume IV: Elemental Cost Analysis and Performance and Statistical Data – tables. 1972. (#72-12S)

Spring 1972 Summary Report, Ontario Universities Physical Resources Study (TLH) Report to the Joint Sub-Committee on Capital Studies of the Committee of Presidents of the Universities of Ontario and the Committee on University Affairs.

1972 Interim Capital Funding Formula was cancelled.

Nov. 1972 Committee of Capital Financing established a Standing Subcommittee to continue the work begun by the task forces, particularly with respect to recommendations in Building Blocks, Volumes 1, 2 and 3.

Nov. 1973 Phase II of the building cost study resulted in:
Published: Building Blocks: Volume V: Report of the Task Force-Building Life Costs. 1974 (#74-1)

April 1974 Stemming from recommendations in **Building Blocks, Volume 5**, COU agenda included a Proposal for the Establishment of a Reporting System for Annual Costs of Operating and Maintaining Ontario University Buildings.

Dec. 1978 Report of the Standing Sub-Committee to the Committee on Capital Financing concerning revisions to Building Blocks
Published: Building Blocks: Volume VI: Report of the Subcommittee-Revisions to Building Blocks (#78-12).
This report presents in a single volume the most recent recommendations previously contained in Volumes 1, 2 and 3 of Building Blocks. The first triennial survey is also reported.

Highlights:

- Ten input measures were reduced to five: FTE undergraduates, FTE graduates, FTE faculty, Lab contact hours, and Library volumes.
- All ***fourteen*** universities were included in the survey rather than just the original five.
- Separate sub-categories for *Instructional Office* were introduced.
- Variable space factors for *Laboratories* were adopted to reflect the needs of different disciplines.

July 1981 **Published: Inventory of Physical Facilities of Ontario Universities. 1980-81 (#81-7)**

July 1984 **Published: Inventory of Physical Facilities of Ontario Universities. 1983-84 (#84-5)**

Dec. 1984 Task Force to Review COU Space Standards was struck.

1986-1987 The COU space formula began to be used directly for the allocation of provincial funds. The Ontario Ministry of Training, Colleges and Universities (MTCU) now uses space entitlement as generated by the formula to determine the allocation of repair and renovation funds under the Facilities Renewal Program.

Nov. 1987 The COU Standing Committee on Space Standards and Reporting was established. Future consideration was to be given to the question of eligibility of federated and affiliated institutions for capital funding.

Jan. 1988 **Published: Building Blocks: Volume VII: The Final Report of the Task Force to Review COU Space Standards. 1986-87 triennial survey published (#88-1).**
Highlights:
- Space factors were converted to metric units.
- Five input measures were increased to eight: added FTE non-faculty research appointments; FTE non-academic office staff; and total assignable space.
- Instructional labs: some changes were made to the discipline groups.
- Research: non-faculty researchers weighted at 50%; discipline group changes.
- Office: non-academic office staff included as a new input measure.
- Plant Maintenance appears as a separate category.
- Changes to formula for Library and Athletics.

1988 The Committee on Space Standards and Reporting was created. It replaced the Task Force on COU Space Standards.

Feb. 1990 A Background Paper Prepared for the Joint Working Group:
University Space Standards in North America.

Feb. 1990 Report of the Joint Working Group on University Space Utilization:
Classroom Space Utilization in Ontario Universities, 1988-89.

The review of classroom space and its utilization was carried out to satisfy a concern expressed by the "Ontario Ministry" that classrooms were underutilised and that the COU space guidelines were too generous. Data from a sample of Ontario Universities showed that the universities were meeting or exceeding the hours of use per week and percentage of seats occupied in the classroom space factor, and the average area for the different furniture types currently in use was also consistent with the assumption in the formula. The survey also showed that extensive use during the evening was occurring in many institutions.

Jan. 1991 **Published: Inventory of Physical Facilities of Ontario Universities, 1989-90 (#91-1)**

March 1991 Federated and affiliated Colleges to be included in the triennial survey.

1992 **Published: COU Building Blocks-Users Guide (first edition)**

Dec. 1993	**Published: Inventory of Physical Facilities of Ontario Universities, 1992-93 (#93-5)**
July 1997	**Published: Inventory of Physical Facilities of Ontario Universities, 1995-96 (#330)**